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News Print Discussed at Publishers' Meeting

Policy of International Paper Co. In Seeking Financial Interest In Daily Newspapers Attacked By Some Members of A. N. P. A.—Despite Criticism, Convention Adopts Resolution Endorsing All Actions and Activities of Paper Committee and Its Chairman, S. E. Thomason, Including Standard Contract Price Negotiations

One of the most important subjects discussed at the American Newspaper Publishers' Association's annual convention, held at the Waldorf-Astoria Hotel, New York, last week, was the general news print paper situation, especially the new price fixed by the International Paper Company, and the policy of the corporation in seeking financial interest in dailies. S. E. Thomason, chairman of the paper committee, met criticism that the paper company had aided in his purchase of the *Chicago Journal.*

Paper Committee Criticized

The criticism of the paper committee was launched by E. K. Gaylord publisher of the *Daily Oklahoman* and the *Oklahoma City Times,* last month, and later appeared in trade journals. Mr. Gaylord, who is ill, could not attend the convention of publishers. Mr. Thomason, in addressing the convention, summarized the complaints thus:

"Mr. Thomason has no business to be chairman of the paper committee because a paper company holds securities of the *Chicago Journal.* The paper committee failed to do its job because (1) the price of paper should be lower; (2), it failed to prevent the manufacturers from coming to an accord on the price; (3), it didn't keep the membership adequately advised."

Mr. Thomason disclosed that he had wished to resign from the committee several months ago, but that the committee would not accept his resignation. He also pointed to bulletins issued by the A. N. P. A. as keeping the membership advised of the news print price negotiations.

Hearst-International Contract

He explained that the Hearst newspapers had made a contract with the International Paper Company, covering 28 per cent of the Hearst requirements, late in October at a price of approximately $50 a ton. Premier Ferguson of Ontario and Premier Tachereau of Quebec, the largest paper producing provinces of the Dominion, had called a conference, urging that such a price would be ruin to the Canadian news print industry. Various Canadian mills and the International participated.

Many conferences were held with Hearst representatives, Mr. Thomason's committee reported, and finally on a revision of the Hearst chain requirements, a new price for five years was made. This price was $55.20 a ton "and, so far as your committee can learn this price is the basis for the standard price contracts issued by the International Paper Company to all publishers."

After he had met the complaints that the price had been permitted to soar too high, and that his committee had failed to keep the publishers in touch with the negotiations, Mr. Thomason turned to the personal side of the criticisms—his purchase of the *Chicago Journal.*

Chicago Journal Purchase

"I contemplated financial arrangements with the International," he said, "on the same basis that I would have contemplated arrangements with any of the other paper companies. They had paper to sell and were willing to help me buy it. After several weeks of negotiations the International Paper Company agreed to buy, and Mr. Bryan and I agreed to sell our $1,000,000 of debentures and so much of our preferred stock as we needed to issue.

"In consideration of their purchase of these securities at par we agreed to sign a paper contract covering our requirements of paper for ten years at the market price. As a further premium for their purchase we agreed to issue to them or their nominee in Chicago 10,000 shares or one-third of the common stock we were then issuing, and they agreed to sell this stock back to us during the ensuing five years at a graduated scale of prices.

"The 10,000 shares amounted to one-third of the common stock which we were then issuing, and to but one-ninth of the common stock which we should have the power to issue.

"This transaction gave the International Paper Company no more control over our Chicago newspaper or its policies than any one of you has. Its relationship to us was precisely the same as that of any bank with which we might have made a similar arrangement would have been."

Members Endorse Stand

Publishers who spoke in endorsement of Mr. Thomason and his committee were: H. Ponting, *Detroit News;* Frank B. Noyes, president of the Associated Press, *Washington Star;* F. I. Kier, *Hamilton* (Ont.) *Spectator;* Walter Strong, *Chicago Daily News;* E. Lansing Ray, *St. Louis Globe-Democrat;* George M. Rogers, *Cleveland Plain Dealer;* E. P. Adler, *Davenport* (Iowa) *Daily Times;* J. P. Kenney, *Ottawa* (Ont.) *Citizen;* W. E. Gonzales, *Columbia* (S. C.) *State;* Colonel McCormick and Carroll Schaffer, *Chicago Evening Post.*

Fleming Newbold of the *Washington Star* offered and the convention by standing vote adopted the following resolution:

"Resolved, that all the actions and activities of the paper committee are approved by the convention and that the paper committee and its chairman have our fullest confidence."

Resolution Tabled

A resolution to put the publishers of the country on record as

(*Continued on page 74*)

Philadelphia Paper Market Seasonally Active

Trading By Local Distributors Is Apparently Along Specialized Lines, Springtime Requirements Enjoying Bulk of Request—Fine Paper Situation Continues Rather Spotty, With Few Standard Grades Normally Busy and Prevailing Demand Generalized.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., April 28, 1929.—Though the paper industry has been gradually showing signs of revived interest, the trading seems to be more along the lines of a specialized type where seasonally active spring lines are the chief products in demand. This of course is true of the wrapping paper market but does not apply to the fine paper situation where spotty conditions have ruled for some time and where few grades are normally active. There has been more of generalized demand in the fine paper group.

Paper Board Sales Meeting

With a most instructive program and informative treatise of the sales promotion work that is being carried on under the supervision of the Paperboard Industries Association there was held at the Benjamin Franklin Hotel last Friday a special dinner session attended by 75 associates of the board industry and representatives of manufacturers as well as consumers. The meeting was sponsored by the joint groups of the Paperboard Industries Association and the National Association of Fibre Box Manufacturers, with T. C. Mitchell, of the Federal Container Corporation, subsidiary of the Crown Zellerbach Paper Company, as chairman of the arrangements committee. The meeting was a social gathering while the various speakers told of the sale promotion work as it had already been effective in producing additional sales fields for paper containers and of a future development pending for further extension of the use of paper containers in industries where heretofore the use of the products had been entirely eliminated or sparsely used. At the dinner Chairman Mitchell presided and welcomed his associates with a foreword of the purpose of the special gathering and its import to the paper board industry and the container manufacturing division.

Albert H. Luhr, the main speaker of the program, who came from Chicago to bring the sales message of the association to the local associates as chairman of the sales promotion committee covered the work of the committee within the past year or more. He reviewed the work accomplished among the newer industries that have been converted to the use of paper containers through the sales promotion program. He also went over the survey of the still undeveloped sources of container consumption stating the many possibilities that this unexploited field held for further extension of the use of these paper products.

Paper and Twine Merchants Outing

Having devoted but a brief time to the business routine the members of the Paper and Twine Merchants' Association of Philadelphia, turned the April session over to a program of social diversion in a springtime outing held at the Roxborough Country Club, near Philadelphia, last Friday. With a full quota of the membership attending the occasion, graced by the presence of the fair sex for the first time since the organization has promoted these combined business and fellowship gatherings, the afternoon and evening was devoted to a diversified entertainment schedule including a chicken dinner, bridge, dancing and outdoor sports on the golf links and tennis court. There were 15 prizes donated by the various members and these were awarded to contestants in the outdoor games, for the highest score at bridge and to the lucky number winners in the elimination dance contest.

President George K. Hooper, of the Hooper Paper and Twine Company, presided at the dinner table and, with his partner Mrs. Stanley C. Brower, was the winner of the elimination dance contest. In his address he thanked the members for the hearty co-operation extended in the organization and work of the association in the few years that it has been in existence and for the united effort which had given it an enrollment of more than 90 per cent of the wholesale paper and twine men of the Quaker City. He complimented his associates, Vice President Joseph Waldman, Treasurer Frederic S. Balch, Secretary John J. Birle, Jr., and Chairman Frederic I. Brower, of the membership committee, for the good work and success which the organization has met since its inception a little over three years ago. He gave a resume of the development of the body from the time of its organization down to the present day with a survey of the trade benefits it had secured by united effort and the factors it sponsored for its welfare and that of the membership.

A word of praise was extended to the chairman on arrangements, E. L. Richards, to whom the members were indebted for one of the most delightful social occasions that the organization has held. During the course of the evening it was announced that Secretary John G. Birle, of the American Forest Products Corporation, was about to become a benedict and that the wedding would take place on April 25, when he and Miss Rose Donelly would be united in wedlock at the Roman Catholic Church, 50th and Cedar Avenue.

W. C. Hamilton Co. Runs New Pasting Machine

Having completed the installation of a new pasting machine, the W. C. Hamilton Company is now running it on full time schedule. There has been an improved demand for the type of bristols, boards and other products for which the machine was installed. The machine takes a 45 inch sheet and can be used for heavy work where several plies are used. Although the mills have been in operation for more than three quarters of a century they have never been equipped with a pasting machine until the present equipment was completed. Sales Manager Joseph H. Dutton is touring the Middle West and the Empire State, visiting the distributors in that section. The Miquon mills are running near capacity having a fairly good amount of orders for high grade fine paper and other printers grades in writing papers.

Brown Instrument Plant Extension

It is less than a year since the Brown Instrument Company completed the construction of a two-story addition to its Philadelphia plant, yet the continued rapid growth of the company's business has necessitated another addition to the present buildings. An existing one-story wing of the plant will therefore be demolished at once, and a new two-story and basement building will be erected on the site, also a new central wing of two stories and basement will be constructed.

The additions will be constructed of reinforced concrete throughout. The cost of the new buildings will be approximately $200,000. Construction has already been started. The Ballinger Company, Philadelphia, are the architects and engineers.

The new buildings will increase the floor space of the plant about 50 per cent. This added space will provide larger facilities for receiving, shipping and handling material, also affording more room for manufacturing and research. This project will be the fourth addition the Brown Instrument Company has made to its plant in eight years.

C. F. Black Joins Fulton Engineering

Charles F. Black, long identified with the pulp and paper industries, specializing in paper drying systems, has recently been appointed Eastern representative for the Fulton Engineering Com-

pany, Inc., of Middletown, Ohio, in charge of their Eastern Office which is located at 1700 Walnut street, Philadelphia.

Alexander Bros. Issue New Booklet

Alexander Brothers, Inc., of 14 South street, Philadelphia, have just published a new booklet on Hydraulic Packings and Pump Cups, form A49. Copies of this booklet may be had upon request.

Philadelphia Gear Works Open New Office

The Philadelphia Gear Works have just opened a branch sales and engineering office at Pittsburgh in the Farmers Bank Building. This office was opened for the primary purpose of giving quicker and better service to customers in the Pittsburgh district.

A. S. Datz & Son Adds New Box Supplies

A. S. Datz & Son, 16 South Marshall street, has added a new line of box makers papers, including embossed and printed fancy covers. There are many unique and colorful designs in the lines of the Datz company and these will be shown to the box manufacturers by the head of the firm, John Datz, when the International Box Makers Convention is held in Toronto, Canada, May 15, 16 and 17. It is the intention of the head of the firm to hold an exhibit of the Datz box makers papers at the King Edward Hotel, occupying two rooms, with samples of the new grades, during the convention. The convention will be a joint gathering of the National Paper Box Manufacturers Association, and the Canadian Box Manufacturers Association.

Charles W. Williams Co. Sales

Having planned to consolidate the Philadelphia sales office with the New York headquarters, the Charles W. Williams Company, now occupying offices in the Bourse Building, is executing all orders through the Metropolitan headquarters at 303 Lafayette street. The former local manager, George Hallahan is making the New York headquarters his sales center, working the local territory directly out of that city. He makes regular weekly visits to the Philadelphia trade and the former territory covered from the Quaker City offices. While the Bourse displays are still being shown in the Machinery Floor of that building, it will only be continued until further notice is given of the Williams Company's plans with regard to the Quaker City sales branch and its transfer to the Metropolitan main sales offices. The Williams company has a large following here for its line of papers used by the box making trade.

New Box Papers by Hampden Glazed

An entirely new line of papers for the box making industry will shortly be featured here by the Hampden Glazed Paper and Card Company, whose Philadelphia headquarters are located in the Bourse Building. J. A. Stuckey is the Philadelphia manager and will have the new products on display by late May. There will also be included in the new lines a full assortment of envelope linings which the manufacturer will show for the greeting card and social stationery manufacturers, including several attractive holiday designs for Christmas greetings. These will also be on display at the International Box Makers Convention to be held in Toronto next month in conjunction with the supply trades affiliation with the joint convention, when the paper manufacturers will present their new offerings.

Holyoke Wants Package Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., April 30, 1929.—The Package Paper Company of Brightwood, a manufacturing section of Springfield, has been in consultation with Manager John J. Kirkpatrick of the city gas and electric light plant the past week over transferring that plant to the former Hadley Thread mill plant bought some months ago by the city. Up to present writing no decision has been made as the Springfield business men are very anxious to retain the industry there and several locations have been offered. The Holyoke proposition appeals to the officials and a decision is expected in a few days.

Coty Bag Corporation Busy

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., April 29, 1929—The Coty Bag Corporation is extending operations in its plant on Starbuck Avenue and the large number of orders pouring in will keep the plant operating at capacity for some time ahead. For the past month samples of all sizes, grades and weights of bags have been shipped to the company's distributors in New York City and orders for these bags were taken with such speed that of late production has been one carload shipment every two or three days. Official notice has been given to increase production to at least one carload shipment every day and it is understood that additional machinery will also be installed to provide double this increased output within three months. As a result night work has been started and the intention of the firm is to operate at full capacity for the entire 24 hours of each working day.

Lester Hemings has been appointed general manager of the company's plant and he brings to the position considerable experience in management, production, costs and accounting. Under his supervision are sixty experienced operators, adjustors and helpers. The weekly payroll of the firm will be greatly increased with the night force.

D. S. Walton & Co., selling agents of New York City, have signed a contract with the Coty Bag Corporation to dispose of its entire output of bags, specifying minimum net sales of approximately $2,000,000 per year after the firm is in position to supply that amount. The Walton firm maintains a large warehouse in New York and a great many carload shipments are sent there for stock. Other large shipments are sent directly to the buyer by the local firm. The Walton Company is to do all the selling, purchasing, billing and collecting besides bearing all credit losses and will pay the Coty Bag Corporation for all shipments within thirty days. The contract grants the Walton Company the right to appoint a director of the Coty Bag Corporation; this director to be also on the finance committee for the purposes of being at all times acquainted with and assisting in regard to the finances and management of the Coty Bag Corporation.

The Coty Machine Co., a branch of the bag corporation, has bought a complete machine shop equipment of modern high speed design. A carload of the machines arrived during the past week and the equipment is now being installed in the Starbuck Avenue factory.

S. G. Garrigan Leaves Continental

RUMFORD, ME., April 29, 1929.—Samuel G. Garrigan, for seven years employed at the plant of the Continental Bag and Paper Company, and one of the country's expert sulphite men, resigned this week. The resignation will be effective on April 30.

Fifty superintendents, foremen and the office force surprised Mr. Garrigan with a party held in the conference room of the main office. A. G. Stone, manager, presented a beautiful wrist watch to Mr. Garrigan on behalf of the gathering.

Mr. Garrigan first started with the Great Northern Paper Company and has also been employed by the International and on the Pacific Coast. Seven years ago he became sulphite superintendent at the Continental and last year was made superintendent of the paper division.

Mr. Garrigan has stated that he will be inactive for the present.

Luncheon to Dr. Bergman

Dr. G. K. Bergman, Director of the Central Laboratory of Heisingfors, Finland was a guest at luncheon attended by several members of TAPPI. Among those who attended were M. A. Krimmel, Ernest Erickson, O. M. Porter, D. E. Cable, W. G. Mac Naughton and R. G. Macdonald. Dr. Bergman has been devoting considerable time to the study of the pulp evaluation problem and will visit the American governmental laboratories and several paper mills.

Lake St. John Power & Paper Appeal Allowed

First Divisional Court Upsets Recent Award By Which Charles E. Campbell Would Have Received Commissions of $400,000 On Ten Years' Operation of News Print Contract—Norman E. Wainwright Purchases Don Valley Paper Mills From Davies Estate

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., April 29, 1929.—The court award by which Charles E. Campbell, western newspaper publisher, would have received commissions of $400,000 on ten years' operation of a contract for news print, was upset this week when the First Divisional Court handed down judgments at Osgoode Hall allowing in full the appeal of the Lake St. John Power and Paper Company, Ltd., dismissing Mr. Campbell's action against the company, and allowing the appeal taken by the late E. A. Wallberg as to the amount, which is reduced to $10,000. Thus Mr. Campbell receives only $10,000, instead of the $400,000 which he would have collected under the judgment given by Justice McEvoy at the trial of his two actions. While the appeal of the defendant company was granted unanimously, Chief Justice Mulock dissented from the court's judgment on the Wallberg appeal, holding that a new trial should be ordered.

The contract over which the litigation arose was made between the Lake St. John Power and Paper Company and the Newspaper and Magazine Paper Corporation, New York, one of the Hearst organizations. Mr. Campbell claimed that he had a verbal contract with the late Mr. Wallberg providing for the payment of the usual commission if he should introduce Mr. Wallberg to purchasers of news print. Following this contract, made in the King Edward Hotel, Toronto, in April, 1926, Mr. Campbell introduced Leslie H. Clarke, representing the New York corporation, to Mr. Wallberg. He claimed that the contract for news print resulted from the introduction.

The finding of Justice McEvoy at the trial was that Mr. Campbell was entitled to a commission of one per cent on the sales made from time to time. His lordship pointed out that while the prevailing customary rate of commission was three per cent., this percentage was usually paid to brokers.

The main judgment on the appeal was written by Justice Middleton. After outlining the claim in which Mr. Campbell sought $1,200,000 as three per cent commission on $40,000,000, his lordship deals with the foundation of the claim which is the plaintiff's allegation that Mr. Wallberg verbally agreed with him to pay him a commission. "The plaintiff did not reduce the bargain which he says he made, to writing," his lordship declares. "After the making of the verbal bargain he did not do what any prudent individual would have done, seek to confirm it by letter, reciting the agreement. Nothing was heard from him indicating a claim until February 14, 1927, almost two months after the date of the contract."

New Industrial Area in Toronto

Location of a new industry in the Don Valley, in Toronto, development of a new industrial area and the change of ownership of a 50-year-old Toronto manufacturing business, the Don Valley Paper Company, Ltd., formerly operated by the Robert Davies estate, were made known a few days ago by Norman E. Wainwright, head of the new Don Valley Paper Company. Mr. Wainwright has placed on the market some 35 acres of industrial property, one acre of which has already been sold to the Woburn Degreasing Company, of Waukegan, Ill., who will erect a plant thereon. The mill, goodwill and plant of the paper company alone have an appraised value of $400,000. "I purchased the property of the Don Valley Paper Mills, Ltd., from the Davies estate," stated Mr. Wainwright, "and then turned it over to the company which is now operating there. Together with the buildings and plant the purchase included some 35 acres of land. The paper company is retaining some ten acres of this area, together with a railway siding, and we plan to market the remainder, after carrying out improvements to roadways, as new industrial sites for the Don Valley. The Davies estate has now no interest whatever in the paper plant. The old charter has been cancelled and the present ownership has been granted a new one."

Western Paper Firm Expands

Clark Brothers, Ltd., pioneer paper company of Western Canada, with branches at Winnipeg and Edmonton, has opened a branch at Regina, with offices and warehouse space in the Lynch-Parker building. The company intends to erect a steel and concrete warehouse in 1930 on a site already secured. Stewart A. Clark will be manager of the Regina business, having been transferred from Edmonton. D. A. Clark, Winnipeg, is president and general manager of the company, which, it is stated, was the first to handle flat stocks in Western Canada, having opened a warehouse for that purpose in Winnipeg in 1897. The Edmonton branch was opened in 1910. During recent years the Saskatchewan trade has been handled from Winnipeg, but owing to the growth of business in Saskatchewan it has been decided to open the Regina office again, also having a warehouse in Saskatchewan, where there are almost 200 printing establishments in operation.

Increases Paper Board Output at Toronto

Production at the new mill of the Canadian Paperboard Company, in Toronto, is gradually being increased. The average output now exceeds 70 tons a day. Total capacity of the plant is 100 tons daily, and production on that basis may be expected shortly. Due to keen competition in the paper board industry, and the large increase in the company's production since the Toronto mill came into operation, it was found necessary to close the mill at Campbellford some time ago. Capacity of the Campbellford mill was not large, and the shut-down has been more than offset by production from the big Toronto mill. Operations are being maintained at Montreal and Frankford, in addition to Toronto. When the demand in the paper board market catches up with the present supply, it is expected that the Campbellford mill of Canadian Paperboard will again come into operation.

The greater portion of the power requirements of Canadian Paperboard is supplied by its subsidiary, the Quinte and Trent Valley Power Company. This company owns and operates hydro-electric power plants at Frankford and Campbellford, on the Trent River, with installation capable of developing 4,000 h.p. Power is sold to the parent company under long term contracts. In addition to this, it supplies power to the Frankford Electric Light Company and industrial consumers in the surrounding districts. Quinte and Trent Valley operates a steam plant to supply the power requirements of the Canadian Paperboard's Toronto mill. Revenue from this source is said to have offset losses sustained through the closing of the Campbellford paper board mill. The operations of the Quinte and Trent Valley Power Company for the current fiscal year are being extended to cover a fifteen month period to end March 31, 1929. This year will bring the close of the fiscal year in line with that of the company.

Notes and Jottings of the Trade

H. F. Goldsbrough, in charge of the Toronto office of the Hodge-Sherriff Paper Company, Ltd., selling agents for Wayagamack Pulp and Paper Company, Ltd., Three Rivers, Que., left Toronto a few days ago on his semi-annual trip to the Pacific Coast in the interests of his firm's products.

Don Valley Paper Company, Ltd., which was organized over six months ago by Norman E. Wainwright, who is president of the company, have just declared their first half-yearly dividend of 7 per cent to preference stock shareholders of Record May 15,

payable June 1. The company have had a successful half year and the outlook for future business is bright. Some improvements have been made at the mill, including a Farnsworth system in connection with the drying equipment. Recently, when Toronto was pretty well flooded, there was four feet of water in the mill, necessitating a few days' shut-down, but all stock was moved and the loss was very slight.

K. Crabtree, of the Crabtree Division of the Howard Smith Paper Mills, Ltd., at Quebec, and Henry Spencer, of the Beauhornois Division, were recent business visitors to Toronto.

L. G. Stone, a young man who has absorbed the manufacturing end of the paper trade in the Beauhornois mill of the Howard Smith Paper Mills, Ltd., has joined the staff of the Toronto office for office business training.

Good progress has been made with the new addition being constructed to the Interlake Tissue Mills at Tohorold. The building, which will be used as a clearing house for finished and raw stock, is about completed and will soon be ready for interior fittings.

S. F. Duncan, president of Provincial Paper, Ltd., Toronto, spent a few days last week looking over the company's Port Arthur mill.

C. Ernest Martin, at one time sales manager for the Interlake Tissue Mills, Toronto, and latterly connected with the Saranac Paper Company, in New York State, was recently appointed sales manager for Canada of the Dunlop Rubber Company, with headquarters in Toronto.

At a recent meeting of the Masonic Lodge in Thorold, Ont., all the chairs were occupied by paper makers or paper mill executives from the various paper mills in the Niagara Peninsula.

John Smith, employed by the Ontario Paper Company at Thorold, Ont., is in the hospital with his left leg broken above the ankle, and with head and internal injuries, the result of an accident on the paper machine at midnight. Smith was employed as sixth hand on No. 2 machine and at the time of the accident was standing on the footboard of the second press when in some manner his foot slipped and he fell on to the belt, being carried down to the pit underneath the machine.

W. P. Bennett, distributor of fancy papers and other paper box makers' supplies, has moved from the Commonwealth Building on King street, Toronto, to Room 308, 32 Front street West.

D. H. Parker, manager of the Sturgeon Falls mill of the Abitibi Power and Paper Company, Ltd., was in Toronto a day or two last week. Two machines are in operation at Sturgeon Falls and Mr. Parker was unable to say when the third would be put into commission again.

Luckett Loose Leaf, Ltd., will in future be the firm name of the Toronto company operating under the title of Vawter-Luckett, Ltd. This is a reversion to the name by which the company was originally known. J. S. Luckett will continue as president and general manager. R. L. Warner has been elected vice-president and C. J. Dutton, secretary-treasurer. Mr. Warner has been with the company since 1919, for the past four years in charge of the Montreal office. He will continue in that capacity.

Fred W. Halls, head of the Fred W. Halls Paper Company, Ltd., was the chief speaker at the annual meeting of the Toronto Typothetae Sales Club, dealing with the subject "How local paper dealers can help the printing salesmen."

W. A. Jack Retires from Several Concerns

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., April 30, 1929.—William A. Jack, manager of the American Box Board Company, the American Paper Box Company, the American Corrugating Company and the American Fibre Package Company, all of Grand Rapids, has retired from the above concerns, all of which are virtually one company. He has been connected for 25 years with this industry and is credited with the success attained. According to Theron M. Goodsell, president and acting manager, Mr. Jack's resignation will be effective June 10.

Finishing Machinery Installations

Many of the progressive paper mills are bringing their equipment up to date by the installation of new filters and new calenders, platers and other finishing machinery.

A large Norwood pressure filter plant has been installed at the Stevens & Thompson Paper Company plant at N. Hoosick, N. Y. and is now in operation; and the Smith Paper Company, Lenoxdale, Mass. has had a large Norwood filter plant installed at its Niagara Mills. This latter plant is similar to the one recently installed by the Norwood Engineering Company at Smith's Columbia Mills at Lee, Mass.

Additional Norwood filter equipment is now being installed for the John A. Manning Paper Company at Green Island, N. Y. and a mechanical gravity filter plant is in process for the mill of Bartgis Brothers, Ilchester, Md.

At the Norwood plant in Florence, Mass. two large mechanical gravity filter plants are being built for the Eastern Manufacturing Company, Lincoln, Maine, and another for a similar plant at South Brewer, Maine.

Recent finishing machinery installations made by the Norwood Engineering Company include a special two-motor drive super calender for the Smith Paper Company for its Eagle Mill at Lee, Mass. and a sheet calender for the American Bank Note Company in New York City. The Warren Manufacturing Company of Milford, N. J. has placed its order with Norwood for three glassine calenders and the Russell Playing Card Company of Milltown, N. J. has received a new Norwood heavy plater for its factory.

Two glassine calenders for Peter J. Schweitzer, Inc., Jersey City, N. J. are in process at the Norwood plant. Orders have been received by Norwood for a super calendar complete for electric drive for The Millers Falls Paper Company, Millers Falls, Mass. and for two special super calenders with electric drive for the Columbia Mill of The Smith Paper Company.

German Paper Exports Gain

Germany, Europe's largest exporter of paper and paper manufactures, increased its shipments of those products 10 per cent last year, Trade Commissioner William T. Daugherty, Berlin, reports to the Department of Commerce.

Exports of paper and paper products, including pulp, are reported to have totaled 889,319 short tons valued at approximately $103,689,000 in 1928 as against 808,794 tons and $94,614,000 in 1927.

Imports during the same years amounted to 271,096 tons valued at $17,875,000 and 246,415 tons valued at $14,434,000, respectively, leaving a favorable trade balance in 1928 of 618,223 tons and $85,814,000.

Nearly one-half of the German production, 48 per cent in 1927 and 44 per cent in 1928, consists of printing and packing papers and boards, the remainder being made up in almost equal amounts of other classes of paper and paper manufactures and of boards. Exports of printing paper decreased from 220,510 tons during 1927 to 205,763 tons during 1928, which accounts for the smaller percentage of this group of paper exports as a whole during the year in question.

Exports of boards, amounting to 88,040 tons, increased by 8½ per cent and, of packing paper, amounting to 101,041 tons by 12 per cent. Exports of other classes of paper, which would include writing and other fine papers and a variety of paper wares increased by 13 per cent during 1928, representing as in 1927 26 per cent of the total volume of exports. The largest increase, however, occurred in wood pulp shipments, which rose from 209,055 tons to 259,744 tons, or by 24 per cent.

Barrett Paper Co. Incorporates

KALAMAZOO, Mich., April 30, 1929.—Barrett Paper Company, Saginaw, has filed articles of incorporation with a capital of $100,000. The incorporators are Otto Schupp, Edward J. Barrett and Gustave G. Gottschalk, all of Saginaw.

American Paper and Pulp Association Activities

Quarterly Report of Oliver M. Porter, Secretary, to the Executive Committee of the Association for the Quarterly Period, January 1 to March 31, 1929—Membership During the Past Twelve Months Has Been Increased by the Addition of Sixteen New Mills

These quarterly reports are prepared as a means of keeping the members of the executive committee fully informed of the association's activities, as a permanent record of such activities, and in order that the secretary may place before the committee recommendations covering activities which would seem to be essential for the successful conduct of the association's work.

The more important phases of the association's work during the quarter ended March 31, 1929 are referred to briefly in the following paragraphs:

Membership

Sixteen new mills have joined the association during the past 12 months.

It is felt that when action is taken on the recommendations of the Committee on Development regarding the expansion of the association's activities, under a leader of national reputation, it would be timely to launch an aggressive membership campaign, inasmuch as the Association's membership represents only about 40 per cent of the total number of pulp and paper mills in the United States, although probably at least 75 per cent of the tonnage.

As an essential part of this campaign a competent membership secretary might well be employed who would spend a considerable portion of his time in the field, visiting members and soliciting new membership, thus bringing to the support of the Association's membership campaign the active cooperation of its member mills throughout the country.

During the year the Wallpaper Manufacturers Association and the Supply and Equipment Association became affiliated with the Association, thus extending its representation of the industry and hence increasing its usefulness.

Tariff

The Association's General Tariff Committee, through President D. C. Everest, and other executives appearing as witnesses, presented the industry's need for tariff protection of American-made papers to the House Committee on Ways and Means on February 13. Copies of the association's tariff brief were filed with the committee and were also sent to all the members of the association and to those non-member mills and groups which cooperated with the General Tariff Committee in the preparation of this brief.

A report covering the association's tariff revision work for the industry, together with an analysis of the protection requested and the importers' opposition, has been sent to all the paper mills of the United States to indicate the work which this Committee is doing for the industry and to present tangible justification for the committee's request to the industry, through the key men of each group, for adequate funds for this work.

Convention and Annual Meeting

A great deal of time and effort was spent by the association's staff during the past quarter on plans for the Association's Annual Meeting and Convention—evidently to advantage, as subsequent reports from all sections of the country reflect general satisfaction with the results.

Printed pamphlets covering President Everest's address, the activities of the association's various committees, including the Committee on Development, the Secretary's Annual Report, and the Articles of Organization, as accepted by the association at its 52nd Annual Meeting on February 21, 1929, have been sent to the entire membership.

In addition to these two pamphlets a series of leaflets on the history and work of the association have been gotten out, which have been very favorably received.

The staff of the association is now preparing a pamphlet for popular distribution to cover briefly the history and methods of paper making, unusual uses of paper and some statistical data regarding the paper industry of the United States. This pamphlet is being prepared in response to increasing requests for such data and information from our members, the public, educational institutions, libraries, etc. It is a publication which the association has long needed.

Direct Service to Members

It is interesting to note the increasing requests for miscellaneous information and contacts which the association is receiving from its members. This is taken to indicate an increased appreciation on the part of members mills of the ability of the association to furnish accurate information promptly and in detail and is one of the minor values of the Association to the industry.

Every opportunity will be taken to increase this service and to bring the work of the association as closely as possible to the executives of member mills through the personal contacts of the Association's staff with member mill executives.

Staff Meetings

The association's staff meets weekly with the secretaries of other associations of the paper industry having offices at the association's headquarters, and with such other affiliated association secretaries who may wish to attend these meetings, for discussion of common problems with the view to developing the association's work in the industry as harmoniously and constructively as possible.

Following are brief reports on the activities of the Association's departments during the past quarter:

Statistics—J. A. C. Cavanaugh, Statistician

In addition to its routine activities in the preparation of:

1. The Weekly Business Review;
2. The Monthly Statistical Summary;
3. Special Weekly and Monthly Statistical Services for various groups in the industry;
4. Extensive miscellaneous data as requested by members, non-member mills, government departments and other contacts of the Association;
5. Carrying forward the Association's permanent records of statistical data, charts and other informational material;

The following special activities were handled by the Statistical Department during the quarter ended March 31, 1929:

1. Development of detailed statistical services for the National Sulphite Paper Manufacturers Association and the National Kraft Paper Manufacturers Association;
2. Cooperation with the Bureau of the Census in obtaining complete reports from the industry for the Bureau's 1927 biennial census and its special 1928 annual census of the paper industry;
3. Representation of the Association at monthly meetings of the conference of statisticians held under the auspices of the National Industrial Conference Board, for the purpose of analyzing industrial conditions in all lines of industry as reflected by association's reports.
4. Preparation of special data for the various groups in the industry for use in connection with the Association's presentation of the industry's tariff needs to the Ways and Means Committee of the House of Representatives on Feb. 13th.

The work of the Statistical Department is increasing steadily as the value of its services is being more and more appreciated

by member mills and the various groups in the industry for which it is carrying on special work.

Woodlands Section—C. W. Boyce, Forester

The activities of the Woodlands Section during the first quarter of 1929 centered about the Ninth Annual Meeting of the Section on February 20, at the Waldorf-Astoria Hotel. The meeting program was designed to present a cross-section of pulpwood forestry, with especially important phases of the Section's broad work program selected for discussion. As a result, the papers which were presented and which subsequently were printed in the March issue of "Pulpwood", indicated not only the industry's unsolved forestry problems but also the progress which the industry has made toward profitable and sustained yield management of its timberlands.

In addition to the routine work of the section, preparations are being made to collect logging cost statistics. These should be helpful not only as a means of checking individual costs among mills operating under similar conditions, but also to emphasize the regional differences in total and itemized costs.

Special effort is being made, in the preparation of the Section's pulpwood consumption statistics for the first quarter of 1929, to illustrate the main channels of pulpwood distribution from the forest regions to the mills. This study will be related to transportation methods and costs.

During the quarter a pamphlet was prepared and distributed, in which some of the broad economic questions related to pulpwood forestry, were discussed. This pamphlet, entitled "Perpetuating the Paper Industry—Forestry", was one of a series describing the activities of the American Paper and Pulp Association and was very well received.

Waste Utilization and Steam Improvement—C. M. Baker, Engineer

Outstanding activities during the past quarter have included questions of legislation in several states, a meeting of the National Committee on Waste Utilization and Stream Improvement at New York in connection with the Association's February meeting, and the initiation of more active and direct service to individual mills.

Legislation

Consideration and assistance have been given in regard to legislation in several states including Indiana, Ohio, West Virginia, New York and Maine. Legislation in New York State approved both by industry and sportsmen's organization provided for an appropriation to the State Department of Health of $100,000. This failed to pass, but a modified bill was enacted which made a reasonable appropriation to the Department of Health. Definite information is not available at this time regarding the result of legislation in Ohio, Indiana and Maine. It is believed, however, that there will be no changes in the present laws in these states.

The West Virginia laws have heretofore been prohibitory in character and very unfair to industry. Subsequent to a meeting held in Charleston in January and attended by the Association's Engineer, a bill providing for a constructive program in stream improvement was submitted to the legislature and, after strenuous opposition, passed and signed by the Governor. It is encouraging that the tendency of legislation now appears to be definitely toward the development of rational, cooperative programs rather than prohibitory laws, impossible of enforcement and unjust to industry.

Reports on White Water Utilization

At a meeting of the National Committee during Paper Week rather complete report, regarding the present status of utilization of sulphite waste liquor, was submitted by G. K. Spence, Chairman of the Sub-Committee on this subject. The question of publication of an extensive bulletin on white water utilization was considered, but it was the opinion of the committee that sufficient reliable data was not yet available for such a publication, and it was decided that two preliminary bulletins would first be gotten out covering, first, presentation of the general problem of white water utilization, and, second, scientific data and information regarding white water survey.

Mill Service

The question of standards for mill effluents was discussed in some detail, but after careful consideration the committee unanimously agreed that such standards could not logically be developed, particularly at the present time.

Careful consideration was given to the question of developing more detailed technical assistance to individual mills, to be furnished at the request and expense of mills desiring such service. The prevailing opinion, however, was that sufficient data was not at hand as to the need of such service, its character or cost. This question was therefore deferred for later consideration, with a view to extending such service as the Association could with its present personnel and gathering additional information.

Since the February meeting a number of mills have been conferred with and a detailed white water survey and method of white water utilization studies commenced with a tissue mill. In connection with this survey, which which be rather extensive and in detail, it is proposed to make a careful study of the question for this particular classification with a view, first, of assisting the individual mill, and, second, gathering reliable data and information for general distribution particularly to other mills of the same class. It is hoped to extend this program into mills representing other classifications.

Special Meetings

In addition to the conferences with reference to legislation referred to above, an address was delivered upon request to the Appleton (Wis.) Chamber of Commerce on the question of stream improvement and the Association's program. A meeting of the Wisconsin Advisory Committee of the Pulp and Paper Industry with representatives of the State Department of Health was also attended and assistance rendered in developing a program for future activities in Wisconsin. Further conferences have also been held in perfecting activities of various committees and organizations.

Supply and Equipment Section—W. N. Wilkinson, Chairman

While the Supply and Equipment Section has been relatively inactive during the quarter, yet it has continued its membership work and its direct service to member mills in connection with their contacts with the paper industry.

The Section's membership directory as sent to the entire membership of the Association has developed no little interest in the work of the Section and its service to member mills.

Program For 1929-30

The following program will form the basis of the Association's major activities during the fiscal year commencing April 1st:

1. Expansion of the Association's activities under plans as recommended by the Committee on Development.
2. Tariff
3. Statistics
4. Waste Utilization
5. Woodlands Section
6. Personal contacts; —local, West Coast and foreign
7. Committee activities:
   - (a) Tariff
   - (b) Statistics
   - (c) Simplification and Standardization
   - (d) Sub-committee, National Committee on Wood Utilization
   - (e) Advisory Committees to Government Departments, the Forest Products Laboratory, Forest Experiment Stations, Bureau of Standards, etc.
   - (f) Joint Committee on Vocational Education
   - (g) Joint Committee on Approved Pulp Testing Chemists
   - (h) Waste Utilization and Stream Improvement

News Print Mergers Rumored In Canada

Negotiations For Consolidation of Well-Known Companies Said to be Progressing Favorably—Two or Three Large Corporations May Control Whole News Print Industry Before End of Year—Economic Considerations Forcing Desirability of Lowering Costs.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, QUE., April 29, 1929.—Whether the rumors are true or not, undoubtedly the strength of pulp and paper securities on the Montreal Stock Exchange, in the face of a declining market, is directly attributable to stories going the rounds regarding impending mergers in the newsprint industry. From sources which are usually well informed comes information that real progress is being made in the consolidation of well known companies, and responsible financial houses commit themselves definitely to the statement that "before the year is out" two or three large corporations are likely to control the whole industry in Canada.

It is possible, of course, that these rumors may have arisen because the trend in late years has been towards consolidation, and because it is recognized that economic considerations are forcing the desirability of a lowering of costs all along the line. It's hard to believe that the great holding corporation, Canada Power and Paper, will not seek to strengthen its position, while the ever-expanding activities of the International Paper Company suggest the possibility, and even probability, of the alignment of other concerns under its wing.

A consolidation of the companies which the Dominion Securities Corporation has been interested in financing is regarded as probable. These include the Brompton Pulp and Paper Company, the Lake St. John Power and Paper Company and the St. Lawrence Paper Mills.

In Western Ontario the Backus-Brooks group already control the Great Lakes Pulp and Paper Corporation and the Minnesota and Ontario Paper Company.

If all these rumored, and anticipated, consolidations go into effect, the result will be that four-fifths of the news print produced in Canada will be in the control of five corporations.

Quebec Pulp and Paper Report

The first annual report of the Quebec Pulp and Paper Corporation, covering a period of thirteen months to December 31, 1928, shows that the net result of the operations for the period was a loss of $372,575. A. S. McNichols, the president, states that in the opinion of the directors this loss, while regrettable, is not altogether unexpected, but is a logical sequence to the trend of the ground-wood market which has continued to decline both in demand and in price for the last four years.

Quebec Pulp and Paper Corporation, it will be recalled, is the company that took over the Quebec Pulp and Paper Mills, Ltd., which had been purchased in the latter part of 1927 by interests identified with Price Brothers and Co., Ltd., and the Port Alfred Pulp and Paper Co., Ltd.

During the period under review the company operated only No. 1 mill at Chicoutimi and even that at slightly below capacity. No. 2 mill at Chicoutimi remained idle as well as the mill at Val-Jalbert. Mr. McNichols announces that the Val-Jalbert mill has been definitely closed down, owing to the unsatisfactory market conditions, as well as to the depleted forest resources in the region affected.

"The course of events in both the pulp and paper industries during the past few years," Mr. McNichols adds, "and the prospects for the future are of such a nature that your directors do not feel they can hold out at this time any definite hope of profitable development and operation of your company's assets along these lines, and feel that the only course for them to pursue is the present one of carrying the properties at as small a loss as possible, while continuing to seek a solution of the problem in other directions."

The balance sheet reveals a strong financial position despite the poor operating results. Current assets are shown at $1,481,603 and current liabilities at $278,456, indicating net working capital of $1,203,147.

Fraser Companies' Plans

The Fraser Companies, of Edmundston, N. B., are said to have under consideration plans for the production of cellulose pulp for use in the manufacture of rayon. The companies' properties contain an abundance of the type of spruce especially valuable in the manufacture of cellulose pulp, and the location of the companies' plants gives excellent facilities for the shipment of pulp to foreign markets.

International's New Purchase

W. C. Pitfield Co., of Montreal, representatives of the International Paper Company, have acquired timber lands and properties of the J. B. Snowball Company in New Brunswick, and also the company's saw mill at Chatham. The saw mill is one of the oldest and biggest on the Miramichi River, but it was not operated last year.

Log Driving Hindered by Weather

From Fredericton, N. B., it is announced that with the advance of the season stream-driving operations are beginning farther north in New Brunswick. Although there still is ice in Bathurst Harbor, driving has started on Gordon Brook, some twelve miles up the Nepisiguit and progress is satisfactory.

On the southwest Miramichi River driving will be begun on Hayes Brook early next week. Ice in the main southwest is jammed below Boiestown and above that place it has not moved.

Weather which is too cold for successful driving operations is generally all over New Brunswick. In the St. John Valley the brooks are falling and, although some drives are in safe waters others are hung up for the present. This is the general condition of Canaan, Salmon, Oromocto and Nashwaak rivers. On the Keswick conditions are slightly better. Warm weather and rain are greatly needed.

Steamer for Paper Plant

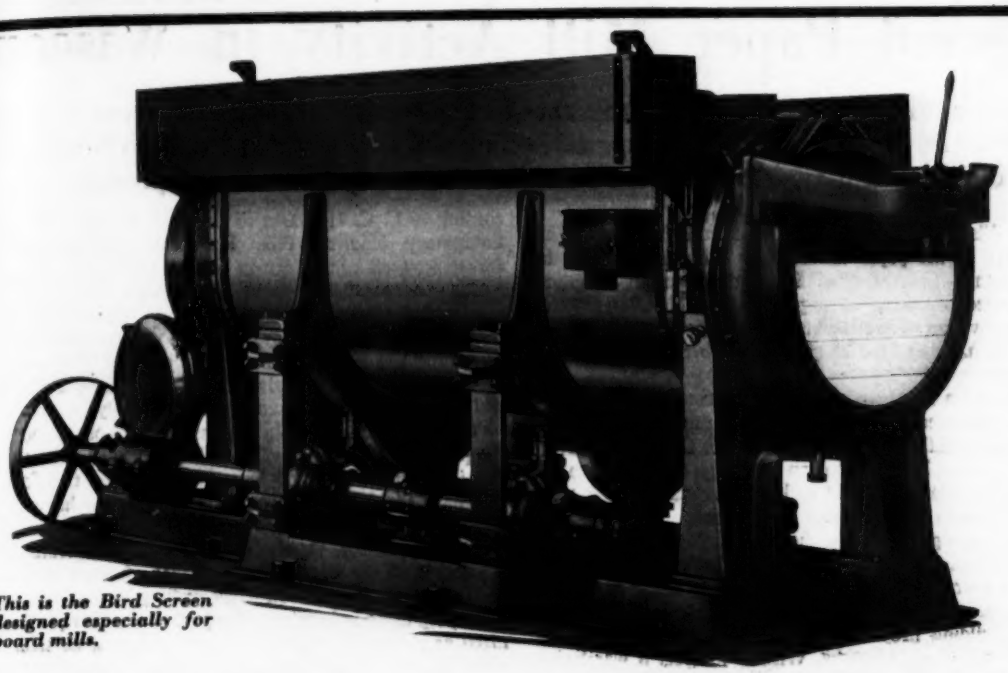
The Mersey River Paper Company is to have an 8,000-ton steamer plying regularly between their plant now under construction in Nova Scotia and New York as soon as the mill comes into operation this year.

Preserving Wood Structures

The Grasselli Chemical Company of Cleveland, Ohio, has recently issued an illustrated booklet, "Looking Ahead Twenty Years in Wood Utility" which stresses the advantages of standard methods of wood preservation for new uses of treated wood. Information is given on wood preservation in the United States, on standard specifications, and practical data on costs, inspection, and utilization of zinc chloride treated lumber. It is explained that zinc chloride treatment, by preventing rot and insect attack, reduces maintenance costs of wood structures, and has additional advantages of long-time proven service records, wide availability, low cost, and giving a clean, paintable fire retardant, odorless product very similar in appearance to untreated lumber.

The booklet should be of special interest to textile and paper mill owners and operators, to architects, engineers and builders specializing in mill construction, and to highway engineers, mine operators and others interested in wood preservation.

A copy of this booklet, which contains 37 pages and 22 illustrations, will be sent on request, to the Grasselli Chemical Company, 1300 Guardian Building, Cleveland, Ohio.



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Bird Screens are built to protect your heavy investment in paper machines. They deliver to the machines continuously their full capacity of clean, uniform stock—and do it day after day, year in and year out. - - - - - - - -

That is why more than two-thirds of all the paper made in North America passes through Bird Screens, the screens that are always up-to-date.

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2837

Increased Paper Mill Activity in Wisconsin

Several Rebuilding and Expansion Programs Will Be Completed During Next Few Months, Resulting In Larger Productive Capacity—Badger Paper Mills At Peshtigo Nearly Ready For Resumption of Operations—Further Kimberly-Clark Developments

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., April 29, 1929.—All indications point to increased activity in the paper industry of Wisconsin during the next few months. Several rebuilding and expansion programs will be completed, resulting in larger output. The Bates Valve Bag Company division of the Hoskin-Morainville Paper Company, Menominee, Mich., has added 25 girls to its force within the last week.

Formal possession has been taken by the Kimberly-Clark Corporation, of the former Lakeview Paper Company mill at Neenah, Wis., purchased recently from the Fraser Paper Company, of New Brunswick, Canada. Plans will soon be ready for extensive remodeling and re-equipment of the mill so as to manufacture specialties, the same as is done in other of its plants.

Work is proceeding rapidly on the overhauling of the Badger Paper Mills Company mills at Peshtigo, Wis., preparatory to a resumption of operations. The digesters are in shape and other work will be completed soon.

Two small building projects have been announced also. The Central Paper Company, Menasha, Wis., is to erect a warehouse costing about $4,000, and a warehouse addition amounting to about $1,000 is to be built by the Edgewater Paper Company, Menasha, Wis.

Consolidated Wage Agreement

Considerable comment has been occasioned by the recent announcement of the Consolidated Water Power and Paper Company that its men would be paid one-third of their regular wages during shutdown periods. The plan already is in operation with good success. The highest skilled men receive $75 a month, and there are four other classes receiving $65, $55, $40 and $30 a month. The Biron mill was almost entirely idle from February 1 on, and crews of some of the other mills had been reduced. All of these employees have been benefited by the plan.

Men who obtain part time employment at the mills or elsewhere during such periods are required to report their earnings, and if they are less than the amount the mill would pay under the unemployment plan, they receive the difference. If they do not work at all, they receive the full one-third of their pay. The Consolidated signs a wage agreement with the unions of the paper industry annually and the above plan was worked out in co-operation with union officials. The unions assist in checking up on the employment of the men elsewhere during shutdowns.

Humorist To Address Superintendents

Douglas Malloch, poet and humorist, of Chicago, is to speak at the convention banquet of the American Pulp and Paper Mill Superintendents Association at Wausau, Wis., June 6, 7 and 8. The banquet is to be held at Rothschild Pavilion, a large open air building in beautiful scenic surroundings. The chairman of the dinner will be D. C. Everest, of Wausau, past president of the American Pulp and Paper Association.

Some of the discussion subjects will be: "Chemical and Mechanical Pulp," "Book and Fine Papers," "Board and Coarse Papers," and "Superintendents Mill Service." One afternoon will be devoted to paper mill tours and airplane rides. The golf tournament is scheduled one day before the convention proper opens. About 900 delegates are expected, including a special train starting from Philadelphia, and another from Chicago.

Wood Pulp Development

Next steps in wood pulp development will be to find a process that will produce a good paper and at the same time permit recovery of substantially all of the chemicals in the effluent, according to C. C. Heritage, of the United States Forest Products Laboratory, Madison, Wis. He spoke to this effect before the forest research conference in session there last week.

The first possibility to be investigated, he said, is a method employing a soda lime base to fit the sulphite process (which contaminates the waterway) permitting a recovery of the effluent something like that of the old soda process. The new, combined process is still in the early experimental stage, and the research will attempt to make it a commercial actuality.

"If we can devise a soda process for resinous woods, to replace the process now necessary," said Mr. Heritage, "the mill man can use jack pine and other inexpensive woods, the fisherman can still have his fish, and the general public can have clean waterways."

Another speaker, Dr. J. G. Ritter, of the laboratory, explained researches on the microscopic structure of wood that would have an important application in paper making, rayon manufacture, and other pulp using industries. The part of the fiber previously recognized as a fibril is only one of several layers, he said. Not only were other internal layers released when wood fibers were carefully treated with chemicals, but an unsuspected outer layer was discovered twining around the fiber very much like the spiral puttee of a soldier's uniform.

Dr. Ritter found that the rate of disintegration of fibers by his method gave a direct index to the character and severity of the chemical and mechanical treatment to which the wood had already been subjected in the pulping process. This is the key fact that is expected to lead to a new technic for judging the quality of pulps for a wide range of practical uses.

News of the Industry

About 3,000,000 white and Norway pine trees will be planted on state lands in northern Wisconsin counties during the present season, under reforestation plans outlined by C. L. Harrington, state superintendent of forests. This will be the largest program ever attempted, utilizing about 3,000 acres of land. Fifty men will be employed regularly on this work by the state, and they will be housed in movable camps. This planting is additional to the extensive operations of paper mills, lumber companies and others in an attempt to save the timber supply of Wisconsin.

H. G. Crockett, of the accounting firm of Scovell, Wellington & Co., was the speaker last week at the Wisconsin group meeting of the Cost Association of the Paper Industry. The gathering was held at Wausau, Wis. Mr. Crockett talked on "Cause of Shrinkage Losses."

Announcement is made of the marriage of George Gardner, general sales manager of the Menasha Products Company, Menasha, Wis., and Miss Elizabeth Glenn Johnson, of Monmouth, Ill. Mr. Gardner is stationed at Chicago, where the general sales offices of the company are located.

F. J. Sensenbrenner, president of the Kimberly-Clark Corporation, is to speak at the Catholic conference on Industrial Problems, at Green Bay, Wis., this week. His subject will be "The Responsibility of Organization of Industry."

Appointed Hammermill Agent

ERIE, Pa., April 26, 1929.—The Hammermill Paper Company announces the appointment of Charles A. Esty Paper Company Division, Worcester, Mass., a branch of Carter, Rice and Company, of Boston, as a Hammermill agent.

DOWNINGTOWN
KILBERRY PATENT SUCTION ROLL

Downingtown Introduced

Outside Angular Adjustment of Box

IN the Kilberry Patent Suction Roll, Downingtown introduced a means of changing the angular position of suction box while the machine is running. Aside from eliminating the expense of a shut-down, this outside adjusting device enables the machine tender to instantly observe the effect of the adjustment, without guesswork.

This is only one of the many important suction roll improvements, which must be credited to Downingtown.

Installations in mills making many kinds of paper indicate that the Downingtown Roll meets every requirement of the industry, and as new problems arise we are prepared to solve them. Literature and a copy of our favorable Suction Roll Decision from the U. S. Court of Appeals sent on request. *Downingtown Mfg. Co., Downingtown, Pa.*

33—PT—5/2—PM—4/20

Chicago Paper Market Conditions Unchanged

While Spring Business Is Satisfactory In Many Respects, Local Distributors Had Anticipated Greater Activity Than Has Been Experienced So Far—Fine Papers, Bonds and Ledgers Continue to Move In Excellent Volume—Demand for Coarse Papers Fair

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., April 29, 1929.—All grades of paper, characterized last week as either weak, fairly good, or strong, held on to this description throughout the week just passed, according to the judgment of Chicago paper men who found that, though satisfactory in many respects, spring business was not yet bringing about just what had been expected of it.

In ground wood papers especially the old specter of over-production was brought out as the reason for only a very mild demand and that on the "hand-to-mouth" basis. Krafts, sulphites and other grades, though stable in price, did nothing whatever sensational during the week. The fine papers, bonds and ledgers, etc., however, continued to perform in pleasing fashion and fine paper merchants were heartily enjoying some increase over the rather dull demand of this time last year. Boards continued to hold fairly strong as far as demand was concerned but there was still too much production, according to board men, to hold up any kind of a satisfactory price. News print continues to recover the ground it lost during the price difficulty and this market seems to be properly normal in practically every respect.

Salesmen's Association Program

The programs of the Chicago Division of the Salesmen's Association of the Paper Industry for the next three weeks have been made public by H. R. Knott, of the Eastern Manufacturing Company, president of the local division. The same excellent choice in speakers seems to be in order. For the noon meeting on Monday, May 7, Mr. Kately of R. R. Donneley's big Chicago printing house, is to talk to the salesmen on the subject of "Printing" and the possibilities of this subject are sure to be treated in thorough fashion by the Donneley executive, who has an excellent reputation in the matter of proper printing methods.

A novel program on Monday, May 13, is to be presided over by Ed. Shaffer, of the Mississquoy Paper Company, who will discuss the subject of bristols and then turn the meeting into a round table discussion at which time salesmen present will be given an opportunity to talk about their own products. The program promises to be educational and exceptionally interesting, according to Mr. Knott.

The Rev. George Craig Stewart, of Evanston, Ill., delivers his annual talk to the association at its Monday, May 20, meeting. Dr. Stewart is chaplain of the national organization and needs no introduction to those who have had the privilege of hearing him. He came into the Salesmen's association as its chaplain almost at the time of the birth of the organization and has been a popular and valuable member ever since. An unusually large attendance is expected at this feature meeting on May 20.

The five big golf tournaments of the Chicago division get under way on the same week when every salesman that can swing a club will go out to Glencoe, Ill., on Thursday, May 23, to inaugurate the intensively competitive series that continues each fourth Thursday throughout the summer months.

Chicago Paper Association Changes

A drastic improvement in the executive workings of the Chicago Paper Association was introduced last week, according to Leo S. Altholz, of the Inlander-Steindler Paper Company, president of that organization. At a special executive session it was decided to change the by-laws of the association to include two vice presidents rather than one. Mr. Altholz declared that the growth of the organization of coarse paper merchants had merited a two sided division of the workings of the group, the work of the jobbers handling retail trade to form one channel and the efforts of the industrial trade described as members supplying kraft, boxes, etc., to industrial concerns, to become the other division. He indicated that members in each division were not getting sufficient applied attention by combined efforts that made no discrimination between the selling of the two separate groups. Accordingly, Earl Beier, of Beier & Co., is to be the vice president in charge of industrial trade and D. F. Peck, Hanchett Paper Company, will continue to preside at all meetings of members serving the retail and miscellaneous trade. The regular meetings of the association are to be divided so that each division will meet separately under the direction of the above mentioned vice presidents.

The West Virginia Pulp and Paper Company, 35 East Wacker Drive, Chicago, has sent out, effective April 15, a list of stock sizes and weights in standard mill grades and sold in original packing only. The list includes price and description of Super White, Super India, Machine Finish White, Eggshell White, White Bond, Blue Bond, Buff Bond, Pink Bond, Canary Bond, Goldenrod Bond, White Writing, Canary Writing, White Mimeograph, Index Bristol and Cream Post Card.

The LaSalle Paper Company, Chicago, distributors of Atlantic Bond, manufactured by the Eastern Manufacturing Company, has sent out through the manufacturers an attractive combination folder booklet containing a number of samples of Atlantic Bond. The cover of the folder and the red sheet which carries the small sample book are samples of Atlantic Cover, suitable for catalog and booklet covers, folders, broadsides, etc. The letter-heads listed within the folder of Atlantic Bond and made in white and twelve colors is said to carry the features of printability, flexibility, durability, variety, utility, uniformity and quality and is said to be usable for letterheads, illustrated sales letters, price lists, loose-leaf catalogues, etc., as well as for business forms.

J. F. McNulty and M. A. McNulty of the McNulty Paper and Twine Corporation, 535 West Chicago Avenue, Chicago, will celebrate their thirty-sixth birthday May 1. They were born the opening day of the Chicago World's Fair, and only because their parents were modest it might have been called McNulty's World's Fair. They are the only twins in the paper and twine industry whose business bears their name.

Start Second Sulphite Course

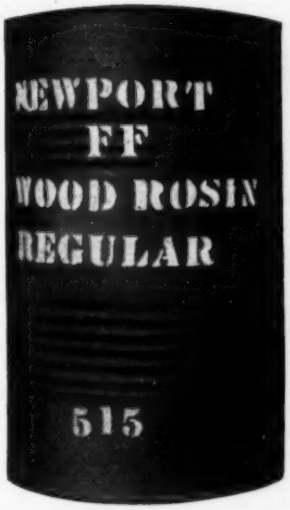
MADISON, Wis., April 27, 1929.—The second short course in the sulphite pulping of wood which is to be given April 29 to May 9 at the Forest Products Laboratory here was overenrolled on April 22 when the number of applicants exceeded the prescribed maximum. As only fifteen can be instructed with maximum efficiency several applications were necessarily rejected.

The April 29 course is the last sulphite course contemplated by the Forest Products Laboratory for the year 1929.

The following companies will be represented at the April 29 course:

Abitibi Pulp and Paper Company, Ltd., Iroquois Falls, Ont.; Champion-International Company, Lawrence, Mass.; Cherry River Paper Company, Richmond, W. Va.; Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis.; Continental Paper and Bag Mills Corporation, Pershing Square, New York City; E. B. Eddy Company, Ltd., Hull, Que.; Great Northern Paper Company, Boston, Mass.; Hawley Pulp and Paper Company, Oregon City, Ore.; International Paper Company, New York City; W. H. Kraske, Montello, Wis.; Marinette and Menominee Paper Company, Marinette, Wis.; Northern Paper Mills, Green Bay, Wis.; Powell River Company, Ltd., Powell River, B. C.; Rhinelander Paper Company, Rhinelander, Wis.; Scott Paper Company, Chester, Pa.

THE ONE ROSIN OF NEWPORT PRODUCTION THAT IS MOST USED IN MAKING PAPER



IT IS MORE ECONOMICAL TO BUY NEWPORT ROSIN ON A NET WEIGHT PRICE BASIS PACKED IN DRUMS

UNIFORM ROSIN FOR UNIFORM SIZE

MANUFACTURERS OF PAPER AND PAPER SIZE NOT ONLY CAN, BUT DO DEPEND IMPLICITLY UPON THE GUARANTEED CLEAN, UNIFORM QUALITY OF NEWPORT WOOD ROSIN

A Newport Product
Therefore Unexcelled

Sold the World Over by

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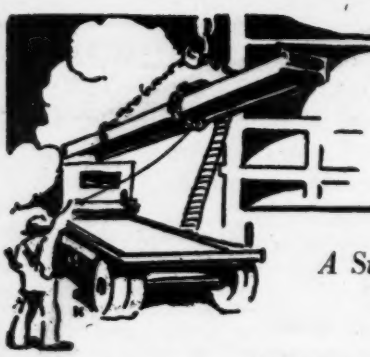
The oldest and largest organization in the world exclusively engaged in selling "Steam Distilled Wood Turpentines", Pine Oil and Wood Rosin.



CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Nashville, Tenn.—The duPont Cellophane Company, River Road, Buffalo, N. Y., a subsidiary of E. I. duPont de Nemours & Company, Wilmington, Del., has awarded a contract for steel framing for proposed new mill at Old Hickory, near Nashville, Tenn., for the manufacture of transparent wrapping stock, and will proceed with superstructure at an early date. The plant will comprise a group of buildings including machine shop, boiler house and auxiliary mechanical structures, reported to cost more than $1,500,000, with equipment. The duPont Engineering Company, Wilmington, Del., an affiliated organization, is engineer for the project.

Shelbyville, Ind.—The Kennedy Car Liner and Bag Company, manufacturer of paper bags and liners for grain cars, etc., has approved plans for construction of a new addition to its plant for which work will be placed under way at an early date. It will consist of a one-story unit, 105x260 feet, for which general contract has been let to the Shelby Construction Company, Shelbyville. Considerable new equipment will be installed. Entire project is reported to cost more than $85,000.

Danville, Ill.—The Cornstalk Products Company, manufacturer of paper pulp from cornstalks and other farm wastes, has preliminary plans under advisement for expansion in plant to provide for increase in present pulp output, and to develop a chemical by-product recovery plant to bring about greater efficiency in operation. The initial work is reported to cost more than $250,000. The present mill of the company represents an investment of close to $1,500,000, and is operating at maximum output. Clarence A. Brown is president.

Black Mountain, N. C.—E. W. Allfather, P. O. Box 537, Black Mountain, is at the head of a project to establish and operate a local plant for the manufacture of paper boxes and cardboard containers. It is understood that property is available for the initial factory. A list of equipment to be installed will be arranged at an early date, and in such connection it is understood that Mr. Allfather is interested in receiving information on this point. It is proposed to establish a company to carry out the project.

Saginaw, Mich.—The Barrett Paper Company, 2019 South Michigan avenue, recently organized with capital of $100,000, is reported planning the operation of local plant for manufacture of paper specialties. The new company is headed by Edward J. Barrett and Gustave G. Gottschalk, both of Saginaw.

Parsons, W. Va.—New Interests, headed by Hugh Pritt, have acquired the local mill of the Whitmer-Parsons Pulp and Lumber Company, which has been in receivership for a number of months past, and which during that time has been inactive. The new owners are reported to be planning resumption of operations, exact character of production not as yet announced.

Leominster, Mass.—The Pyrotex Leather Company has begun the construction of a new plant unit at local mill to be given over to the production of coated paper stocks with crystal and opalescent finishes, as used for the manufacture of high-grade containers for confectionery, perfumery, etc. The new unit will be one-story and is reported to cost more than $45,000, with initial equipment. It will operate under a special process, rights of which have been secured from the Sevigue-Pearl Laboratories et Cie, Paris, France.

Newark, N. J.—Following the acquisition of the former plant of the Stanwood Rubber Company, Frelinghuysen avenue, by Peter J. Schweitzer, Inc., 170 Cornelison avenue, Jersey City, N. J., manufacturer of tissue and other special processed papers, the new owner has arranged for extensions and improvements in a one-story structure, 66x130 feet, estimated to cost about $25,000. As previously announced the entire plant will be occupied for a branch works at an early date, and will be equipped for extensive capacity Nicholas F. Annitto, 706 Bergen avenue, Jersey City, is architect for the construction work noted.

Lock Haven, Pa.—The New York and Pennsylvania Company, 200 Fifth avenue, New York, is understood to have work well under way on a new addition to its mill at Lock Haven, to be used primarily for storage and distributing service, and for which general contract recently was let. It will be two-story and basement, 60x375 feet, reported to cost approximately $140,000, with equipment.

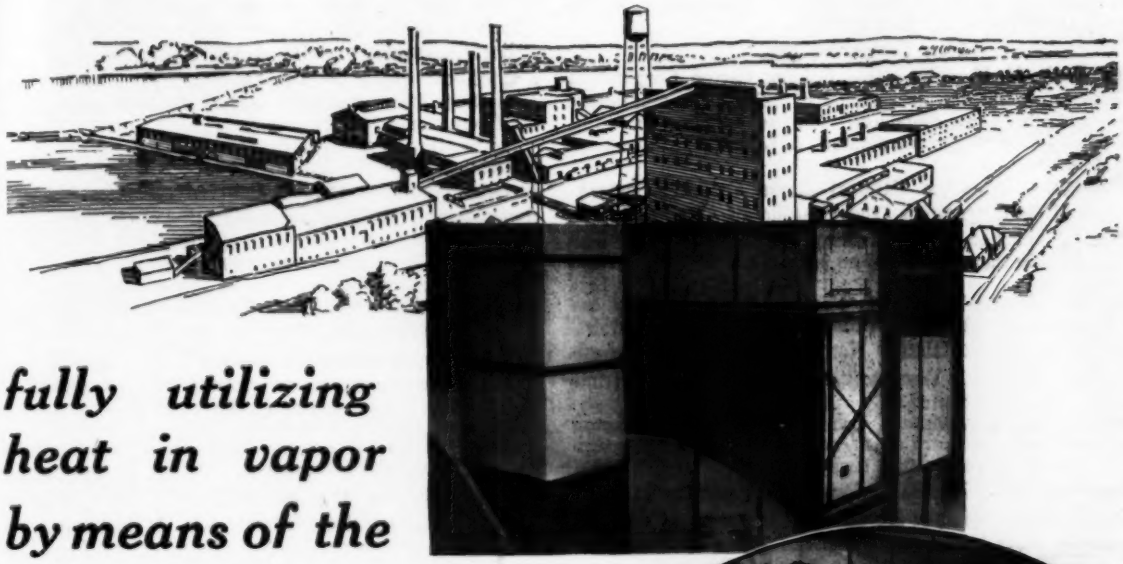
North Bergen, N. J.—The Barclay Manufacturing Company, care of Mochael Levy, 967 Savoye street, North Bergen, recently formed by Mr. Levy and associates with capital of $50,000, is reported as planning operation of local plant for the manufacture of cardboard and paper specialties. It is understood that an existing building will be taken over and used for the industry. Others interested in the project include Leon Donze, 183 New York avenue, Union City, and Peter Musto, 937 Ann street, North Bergen.

Manchester, Conn.—The Rogers Paper Manufacturing Company, Hartford road, South Manchester, is developing maximum production in output of transformer board and electrical insulating paper specialties, utilizing plant facilities which were acquired about 6 months ago, and which are now coming into full operation after an expansion and development program including installation of necessary equipment. Production is on a considerably increased basis as compared with this time a year ago, with employment of full working force. Present schedule will be maintained for an indefinite period and the company is said to have booked heavy orders from a number of electrical manufacturers. Plans have recently been filed for alterations and improvements in two buildings.

Menasha, Wis.—The George Banta Publishing Company has approved plans for the construction of a new addition to its plant to be used for the manufacture of paper boxes, with portion to be given over to storage and distributing service. It will be one-story, 90x150 feet, reported to cost more than $35,000, with equipment.

Philadelphia, Pa.—The Reyburn Manufacturing Company, 32nd street and Allegheny avenue, manufacturer of tags, labels and other cardboard and paper goods, has awarded a general contract for proposed new plant addition, previously referred to in these columns, to J. S. Rogers, Drexel Building, Philadelphia. It will be five-story and basement, 100x245 feet, reported to cost about $375,000, with equipment. Work will be placed in progress

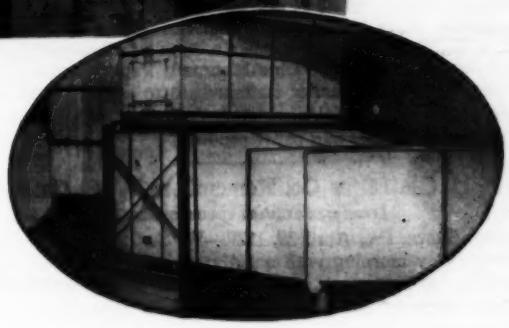
PENOBSCOT CHEMICAL FIBRE CO.



fully utilizing heat in vapor by means of the

Briner Economizer

Licensed Under Patents of E.A.Briner and John E.Alexander



In their plant at Great Works, Maine, devoted primarily to the manufacture of fine quality pulp, the Briner Economizer in conjunction with two Ross heating appartus in the basement insures full utilization of waste vapor from absorption on drying machine to furnish, economically, the heat required for air supply without the use of a large quantity of steam that would otherwise be necessary.

This economizer, built of copper to resist deterioration, is located outside the machine room wall. Both heating and vapor absorption systems are provided with air cleaning filters. The entire equipment was designed, built and installed by Ross engineers.

Upper photo shows exhaust connections leading from hood to top of economizer, exhaust fan housing and stack, economizer casing and duct to heating apparatus in basement.

In oval—fresh air outlet side of economizer, exhaust fan inlet and discharge duct for outlet.

J. O. ROSS ENGINEERING CORPORATION

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ROSS ENGINEERING OF CANADA, LIMITED

NEW BIRKS BLDG., MONTREAL

ROSS SYSTEMS • HEATING—VENTILATING—DRYING •

at once. LeRoy B. Rothschild, 215 South Broad street, is architect.

Iroquois Falls, Ont.—The Abitibi Power & Paper Company has placed another machine in service at its Espanola mill, making two units now in production at that plant and developing about 50 per cent of full capacity. Of the six paper-making machines at the plant, two are obsolete and inactive. Headquarters of the company are at Montreal, Que.

New Companies, Etc.

New York, N. Y.—The Rapid Folding Carton Corporation has been incorporated with a capital of $15,000, to manufacture cartons and other paper containers. The new organization will be represented by one of the incorporators, A. L. Lerner, 51 Chambers street, attorney.

Wilmington, Del.—The National Lignin Products Corporation, care of the Corporation Trust Company of America, duPont Building, Wilmington, has been chartered under state laws, with capital of 50,000 shares of stock, no par value, to operate a wood pulp mill.

Haverhill, Mass.—The E. C. Wentworth Corporation has been incorporated with capital of $50,000, to manufacture and deal in paper boxes and containers. Norman P. Wentworth is president; and Edmund C. Wentworth, 675 Main street, Haverhill, treasurer and representative.

Chicago, Ill.—P. F. Valland Company, 58 East Washington street, manufacturer of card stocks, etc., has filed notice of reduction in capital stock, under state laws, from $643,000 to $100,000.

Cincinnati, Ohio—The Bauer Paper Box Company has been incorporated with capital of 250 shares of stock, no par value, to manufacture paper boxes and containers. The incorporators are H. C. Gang and Eli G. Frankenstein, both of Cincinnati.

Wilmington, Del.—The Blue Mountain Paper Company, Inc., has been incorporated under state laws, care of Martin E. Smith, Citizens Bank Building, Wilmington, capital $50,000, to manufacture and deal in paper and paper products.

P. H. Glatfelter Co. Remembers W. S. Calkin

[FROM OUR REGULAR CORRESPONDENT]

SPRING GROVE, PA., April 29, 1929.—W. S. Calkin was presented on Wednesday morning with a fully equipped microscope by the P. H. Glatfelter company, paper manufacturers, by which firm he has been employed for 32 years. A letter of appreciation for his long and faithful service accompanied the microscope. Mr. Calkin was head chemist at the paper mill.

A brass plate on the box containing equipment for the microscope contains the inscription, "Presented to W. C. Calkin upon completion of 32 years of service with the P. H. Glatfelter company."

Mr. Calkin, who recently tendered his resignation to the company to take effect April 30, will return to his boyhood home in Halifax, Nova Scotia, Canada, to spend the remainder of his life.

Employees of the P. H. Glatfelter company who had long been associated with Mr. Calkin were called into the office of the paper company Wednesday morning when the gift was presented to him. They presented Mr. Calkin with a letter of regret at parting. The letter was signed by a large number of men employed at the mill over a period of years.

Mr. Calkin is a native of Nova Scotia, Canada. After being graduated from Dalhousie University, Halifax, N. S., and Cornell University, Ithaca, N. Y., he entered the employ of a paper manufacturing concern in Johnsonburg, Pa. He was employed there seven years, and then came to the plant of the P. H. Glatfelter company where he has been since.

Mr. and Mrs. Calkin will leave on May 1 for Berlin, N. H., where they intend to spend the summer with their son and daughter-in-law, Mr. and Mrs. J. B. Calkin. In the fall, they intend to go to Halifax to make their home. Their son is employed as a chemist for a paper corporation in Berlin.

High Electric Energy Output Records

The production of electric energy in March, 1929, by the International Paper and Power Company system was 363,636,000 kilowatt hours, 43 per cent greater than the output of the system in March, 1928. For the first three months of this year the company produced 1,086,986,000 kilowatt hours, an increase of 37 per cent over that of the corresponding period of last year.

Included in the output figures are those of the New England Power Association, of the Canadian Hydro-Electric Corporation, Limited—controlling the Gatineau Power Company and the Saint John River Power Company—and of the hydro-electric plants of the International Paper Company group.

The production of electric energy in March of this year of the International Hydro-Electric System—controlling Canadian Hydro-Electric Corporation, Limited, and the New England Power Association—was 61 per cent greater than that of the system in March, 1928; and for the first quarter of this year it was 52 per cent over that of the first quarter of 1928. The International Hydro-Electric System is the new company recently formed as a subsidiary of the International Paper and Power Company to control the New England Power Association serving the heart of industrial New England, and the Canadian Hydro- Electric Corporation, Limited, operating in a thriving and rapidly growing section in Quebec and the eastern part of Ontario between Ottawa and Montreal, and also in the Province of New Brunswick.

The New England Power Association in March of this year produced 123,960,000 kilowatt hours of electric energy, an increase of 14 per cent over the output of the association in March, 1928, and 34 per cent over that of March, 1927. In the first three months of this year, the production of the New England Power Association was 376,924,000 kilowatt hours, 14 per cent greater than in the corresponding period of 1928, and 44 per cent greater than in the first three months of 1927.

The Canadian Hydro-Electric Corporation, Limited, produced 166,904,000 kilowatt hours of electric energy in March, two and one-third times the output of the corporation in March, 1928, and the second highest production for a single month, being exceeded only by that in January. In the first quarter of this year, the corporation generated 496,039,000 kilowatt hours, over twice the output of the corporation in the first quarter of last year, and the greatest for any quarter in the history of the Corporation.

To Discuss Paper Problems at Buffalo

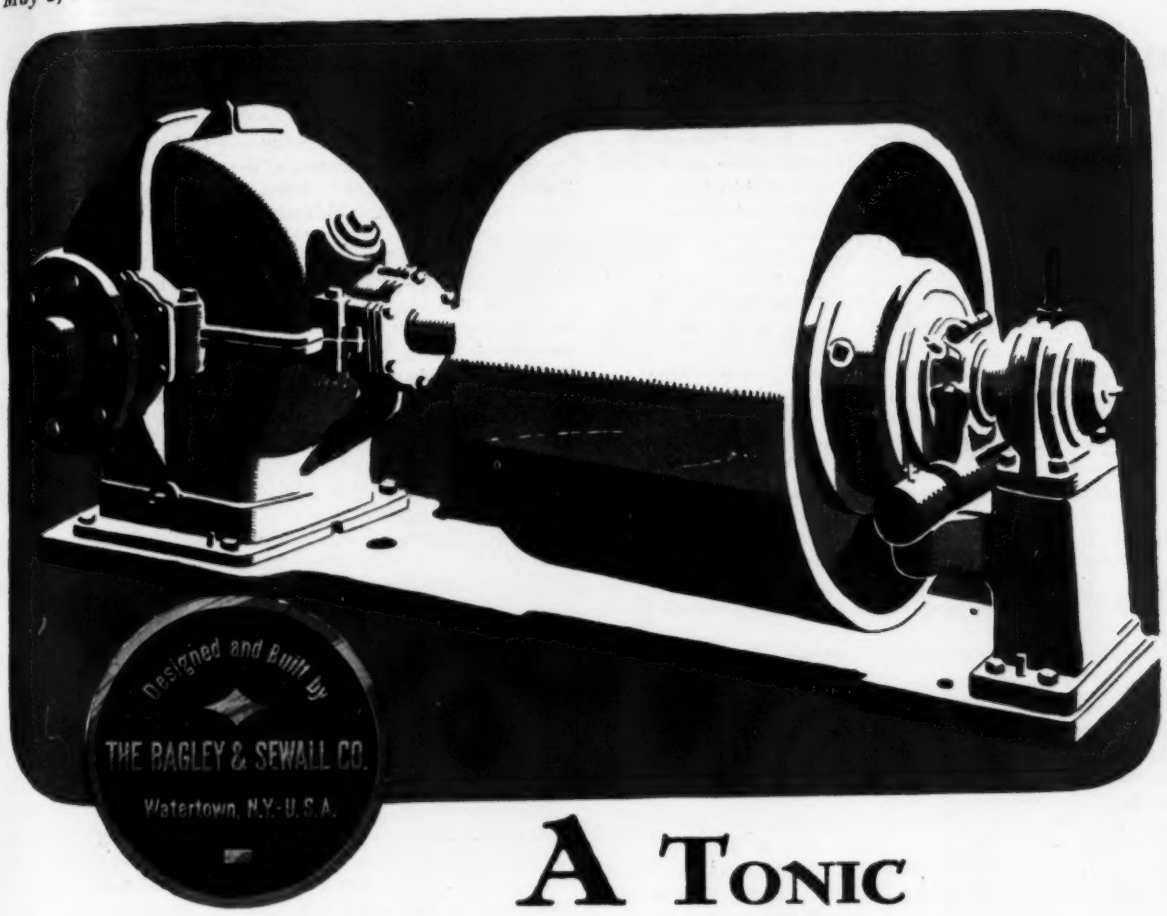
BUFFALO, April 29, 1929.—Problems of the paper industry will have a prominent part on the program of the National Association of Purchasing Agents, which will hold its annual convention in Buffalo June 3 to 6. The general session of the convention on the morning of Thursday, June 6, will be devoted to a general discussion of the general subject of "Paper." Thomas Haugh, superintendent of the Paper Division of Yawman & Erbe Company, Rochester, N. Y., will preside at this session.

Robert C. Fay, director of the Paper Users Standardization Bureau, will discuss the subject "Standardization of Writing and Printing Papers." George R. Griesel of the Robert Gair company of Brooklyn will take up the topic "The Purchase of Paper and Fibre Containers." A representative of the Wrapping Paper Association will speak on "Wrapping Paper."

President Herbert Hoover will open the convention with a message which he will telephone from the White House and which will be amplified in the hotel ball room so that it may be heard by each of the 1500 delegates who are expected to enroll for the Buffalo meeting.

May Adopt Standards for Wall Paper

WASHINGTON, D. C., May 1, 1929.—A general conference of wall paper manufacturers, distributors and users will be held here on May 25 according to announcement of the Commercial Standards Division of the Department of Commerce. The purpose of the meeting is to adopt standards for the industry.



A Tonic for Sluggish Machines

Before you decide definitely that your paper machines have seen their best production days, try an application of a new set of Bagley & Sewall Spiral Bevel Gear Drives. We can quote specific instances where such a treatment has given old machines new life and speed far out of proportion to the cost of installation. And they help *new* machines produce as their makers and operators expect them to. Surprisingly compact, yet packed with power. Precisely cut all-metal gears. Full lubrication. More-than-adequate roller bearings. Vibration-free, quiet, smooth performance that is a delight to the men in the mill and the men who keep books.

We'd like to tell you more about them—write us

The Bagley & Sewall Co.

Watertown, N.Y.

International Paper & Power Outlook Improves

BOSTON, Mass., April 29, 1929.—At the annual meeting of the stockholders of the International Paper and Power Company held last week, a report was presented covering November and December, 1928, and showing income received from dividends on International Paper Company stock of $2,157,517 and balance after expenses of $2,146,204. Dividends paid amounted to $2,150,518 and surplus at the close of the year was $18,114,657.

According to the Boston News Bureau, President Graustein said deposits of International Paper Company stock since the close of the year brought total deposits to more than 99 per cent of the aggregate common stock and 94 per cent of the 7 per cent preferred shares. He explained that there was no underwriting expense in connection with the recent issuance of 1,500,000 Class C shares due to the fact that stockholders subscribed to over 98 per cent of the total and International Securities Company underwrote the remainder.

International Hydro Electric System, he said, owns now more than 82 per cent of New England Power Association and nearly all the stock of Canadian Hydro-Electric System. Recent issue of $30,000,000 debentures of International Hydro-Electric to finance acquisition of New England Power Association stock, he said, was well received in spite of poor conditions obtaining in the bond market.

Second Quarter Earnings

In answer to question of a stockholder regarding the low price of International Paper and Power Company's preferred stock, Mr. Graustein ascribed it to unsatisfactory conditions in the news print industry and unsatisfactory earnings of the company. However, he stated, he expects earnings gradually to improve due to diversification of products and operations in the power field.

The news print mills, he said, have not quite had time to get into stride but future statements should show better progress in this direction. Although earnings statement for the March quarter may not be available before May 15, it is expected to show but little improvement. In the second quarter, and those following, however, it is expected that a good showing will be made. It is reasonably probable that 1930 will show earnings several million dollars higher than in 1929.

Believes Preferred Dividends Safe

Although the decline in news print prices was more severe than anticipated, President Graustein said, increased efficiency of the new mills will offset this in part. The contracts under which Canadian provincial governments are to take International's power, also, involving yearly increases, will provide mounting income in future years. For these reasons, President Graustein expressed his belief that the preferred stock of the company at present is cheap. He considers that dividends on the senior stock are safe. In addition, he sees no threat of interruption of dividends on the Class A stock, nor does he expect that dividends on the Class B and Class C shares will be delayed when it comes time to pay them.

Consumption of news print in the opening months of 1929, he declared, has been greater than during any time since 1926. International, with its modern mills, can "keep going" on $55-a-ton paper price, he said. It is the strongest competitive condition of any Canadian paper company, but the price is not sufficiently high to assure a fair return on invested capital. In 1929 more than 600,000 tons of news print will be made by the company, which at current price will mean approximately $15,000,000 less in earnings than would have been had at the price of $75 a ton obtaining five years ago.

"Herald-Traveler" Purchase

President Graustein declared, in connection with the utility investigation at the State House, that he will go before the committee on his own offer and "lay his cards on the table." He has no fear of the result.

He said that International Paper Company does not control the *Herald-Traveler* and Mr. Winslow was told when the investment was made that the management of International did not want the job of "running a paper." What they wanted was the paper's order for news print, which amounts yearly to 5 per cent of International's news print production. Other news print companies have financed newspapers in order to get their business and International has lost money in the past by not doing so.

He said that the company would not pay any more for the *Herald* than what it was worth as an investment. The management felt it was getting a bargain and, in fact, did. The price paid was more than justified. When the facts are presented he believes the policy will be found to have been absolutely sound and the public will appreciate it when they have a complete statement.

Mr. Graustein answered in the affirmative a question asking if it was not true that the *Boston Post* buys a substantial quantity of International's paper.

Reverting to power questions, Mr. Graustein said that the company has sold power in excess of the amount now being delivered. In the next three years, this will bring in $3,000,000 additional net income.

Log Driving in Northern New York

[FROM OUR REGULAR CORRESPONDENT]

POTSDAM, N. Y., April 29, 1929.—Log driving, once an occupation which employed hundreds of men on the rivers of Northern New York, is fast becoming a lost industry to this section. It was only a few years ago that every stream of size having its headwaters in the Adirondacks was utilized to float logs down to paper mills. Hundreds of men were engaged in log driving and many of these have gone to Canada where thew continue to work at their trade. Now that American paper mills are depending upon Canadian pulp wood very little log driving is being done in this section. The wood pulp is now brought in either by boat to terminals along the St. Lawrence or by freight from the Province of Quebec. Virtually every paper mill in Northern New York obtains its wood from Canada. However, some wood is being cut in the Adirondacks and floated down the Moose River to the plant of the Gould Paper Company at Lyon Falls. A small amount is also floated down the Indian River each spring and taken by train to Carthage for use by the Island Paper Company. A large force of men are also engaged in making a drive on the Cedar and Hudson Rivers in the interests of the Union Bag and Paper Corporation. The drive is under the direction of Phillip Lewis and is expected to reach Hudson Falls about June 1. A large drive is also under way at Colton Falls where one million feet of timber and 14,000 cords of pulpwood are being floated down the Racquette River. The timber was hauled upon the ice during the winter and as this gradually broke the logs have floated and are now nearing their destination at the plant of the Racquette River Pulp and Paper Company.

Caution Testing Chemists

The Joint Committee on Approved Pulp Testing Chemists, of which Maj. O. M. Porter, secretary of the American Paper and Pulp Association is also secretary, has just had occasion to caution its approved chemists in the matter of the exercise of care to remove all portions of bits or knives which may have been broken off in the sampling of wood pulp, with the view to preventing any possible damage which might result to attendants, pumps, machinery, etc., should these steel particles get into the beater.

The Joint Committee is making every effort to insure a high and uniform standard of pulp weighing, sampling and testing.

Quick Acting! accurate control!

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Beaters: Holland and Niagara
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Two important operating essentials in any machine—one insures against loss of time, the other against loss of quality. The 1929 Voith Inlet possesses both features.

With the new 1929 Inlet *one* man only, instead of two or three, can quickly adjust the orifice opening through the medium of a regulating device. This device *accurately* controls and *indicates* the actual orifice opening directly in front of the distributing roll.

It is just one more feature built into the Voith Inlet to give the operator more flexible and accurate control of his machine while helping him make a *better* sheet of paper.

This feature, together with the Deckling-in device and the device to regulate placing the apron on the wire, all are advantages that make for greater efficiency and production; they warrant your careful investigation.

Write for details now.

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Machinery for Paper and Pulp Mills

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Portland, Oregon

Developing Northern New York

[FROM OUR REGULAR CORRESPONDENT]

CARTHAGE, N. Y., April 29, 1929.—At one of the largest and most enthusiastic gatherings of industrial leaders of Northern New York held under the auspices of the Chamber of Commerce the principal address was given by Floyd L. Carlisle, head of the St. Regis Paper Company. He made a stirring appeal to all thinking people of Northern New York to aid in bringing about the right to use mature timbers from state lands in the Adirondacks, permission to construct storage reservoirs, and to back the development of the St. Lawrence River, all of which he claims are absolutely essential to the industrial prosperity of this section. Mr. Carlisle's address in part follows:

Additional Hydro-Electric Power

"Industrial development will come to this section just as soon as problems regarding the generating of additional hydro-electric power are settled. Unfortunately at this time there are laws on the statute books of the state permitting the building of reservoirs. For the last six years because the governor would not permit the law to be enforced nothing has been done about building new reservoirs. Our company would like very much to build reservoirs on the Black River and also the Salmon River but we have been told that these applications would be denied. I believe that a vast majority of people in this section believe that we ought to have the development of water power through storage but they have not been able to unitedly express that sentiment. If the people of this section regardless of politics stood up and demanded these things the opposition would fade away. As I am talking here tonight two-thirds of the water flowing down Black River is being wasted. It has gone on for years and is not doing anyone any good. If we had storage here mills could make pulp cheaper than they can make it now. The cost of making paper in this section would be cheaper and that would certainly be a material benefit to everyone living here.

"We are having an up grade fight and I often wonder why we fight such an uphill battle. This is an illustration. Recently the Taggart Corporation, which has built the new plant here, acquired the Bates Valve Bag Company. Within a short time from the announcement of the sale we had telegram after telegram from presidents of power companies, Chamber of Commerce organizations and others and they even offered to send delegations to point out the advantages of their regions. There were promises of free sites, exemptions from taxes for ten years, etc., and these came from the south, the west and middle west. What a contrast to the problem here. That is why I say sometimes I wonder if it would not be better to quit the fight and move these industries to sections where we would be welcomed. However, we seem to have been elected to carry on the fight and by heavens we are not going to quit.

The Wood Situation

"There is one other major thing that I am going to discuss and that is the wood situation. The people who come into any section to clear it burn the trees. They were not valuable then and whatever the reason at least the men interested in the enterprise would cut off the wood which was the basis of the paper industry here. But our wood is not gone. We have not got the dearth of raw materials that some people think because of the state preserves which cover two million acres every year there is going to waste over 400,000 cords of wood and this will continue. I will say without danger of contradiction that within fifteen years that waste will be increased to a million cords. The industries of this state which pay taxes have the right to use the wood but that is something that we cannot de because of the unusual conditions in the state. In New Hampshire and Vermont we happen to own timber lands next to those owned by the government. The government has been taking off mature timber from its land in Vermont. The same men who protest timber off New York state lands have cut the mature timber on their own lands. I know because the St. Regis Paper Company has bought and used most of it. They were willing enough to take the mature timber and they did not think it was a bad thing for their forests. But if the state owns it, it is a crime and somebody is trying to rob the state.

Mature Timber From State Lands

"We happen to have in Northern New York a great paper industry that can be perpetuated for a long time to come if mature timber of state lands can be cleared. That requires an amendment to the constitution. The only possible opposition to the amendment is that the Adirondacks should never be commercialized. We can go about our business of making paper and we can bring wood from Canada and New England. We are reforesting our own lands and in time will have our own supply but we can not have a big paper industry here unless you can release that wood. No honest opposition can be bought against it and it can be broken if this section is united.

"We have been fighting another big battle, that of railroad freight rates. If you wanted to ship a carload of bags from Carthage to Chicago we found that a man in Boston could ship the same cargo to Chicago just as cheaply. I do not know how much we have spent but it is well over a hundred thousand edging in on these rates. Down in West Virginia we have a plant at Covington 400 miles from the nearest seaport and we can bring a ton of kraft pulp by railroad from Norfolk at thirteen cents and when we land that same pulp in New York harbor for shipment to Carthage it costs twenty-five cents. That is the difference between profit and loss and we are trying to break down the barrier. We are going to get better rates here eventually because according to the law there can be no discrimination in railroad rates."

Boston Paper Trade Happenings

BOSTON, Mass., April 29, 1929.—A good number of Boston members of the New England Paper Merchants Association are planning to attend the meeting of the organization at New Haven May 7 and 8. They will go on a special car attached to the 12 o'clock (noon) train from Boston to New Haven via Springfield, May 7, which will stop at that city, Worcester and Hartford for other members. The meeting opens at 6:30 at the Hotel Taft.

The Munroe Felt and Paper Company, Lawrence, Mass., has been sold to Bulkley, Dunton & Co., New York, wood pulp importers, and the name changed to the Munroe Paper Company. The mill manufactures wrapping paper and kraft specialties. The Boston office has been discontinued.

Arthur E. Ham, of Arthur E. Ham & Sons, has returned from a business and pleasure trip to New York, Philadelphia, Washington, and other places, accompanied by Mrs. Ham and son, James L. Ham.

Max Frank, for many years buyer for John Carter & Co., Inc., is still seriously ill at his home, 9 Gibbs street, Brookline, Mass.

Among those who called on the Boston trade last week were W. L. McAllister, sales manager of the Waterfalls Paper Mills, Mechanic Falls, Me., Lee H. Hulett, sales manager of the Chemical Paper Manufacturing Company, with E. S. Dunbar, advertising manager of the Associate Mills, both of Holyoke, and Charles H. Barr, editor of *Rags*, the official organ of the rag content manufacturers.

Kenneth R. Kent Joins Standard Paper Co.

Kenneth R. Kent has accepted the position of manager and treasurer of the Standard Paper Company, manufacturers of gummed tape, of Bellows Falls, Vermont. Mr. Kent was formerly sales manager of the Sample Durick Co., of Springfield, Mass.

DU PONT *Dyestuffs*

DU PONT
RHODAMINE
6 GDN Extra

Du Pont Rhodamine 6 GDN Extra possesses high tinctorial power and is very brilliant. Alone or shaded with Du Pont Orange RO it will produce all the brilliant pink and cherry shades. Du Pont Rhodamine 6 GDN Extra possesses good affinity for the fiber and does not burn or mottle on the dryers.

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Wilmington, Delaware

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San Francisco, Calif.

8 Thomas Street,
New York City.

126-128 South Front St.,
Philadelphia, Pa.

709 Hospital Trust Bldg.,
Providence, R. I.

507 Northern Ontario
Bldg.,
Toronto, Ontario.

Box Board Production for March

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 1, 1929.—March production of box board, based on reports to the Department of Commerce by 93 firms operating 120 plants (reports for earlier months including four concerns now out of business) was 88.3 per cent of capacity, as compared with 81.2 per cent in February and 76.5 per cent in March, 1928. In the following table the capacity data vary according to the normal number of working days in each month.

Year and Month	Operation: Inch hours Capacity	Operation: Inch hours Operated	Operation: Per cent of Capacity	Production: Short Tons Capacity	Production: Short Tons Output	Production: Per cent of Capacity	New Orders Short Tons	Unfilled Orders (end of month) Short Tons
1928								
Jan.	10,372,900	7,833,458	75.5	273,125	203,882	74.6	204,128	80,417
Feb.	10,372,900	8,136,737	78.4	273,125	211,862	77.6	215,333	85,862
March	11,312,244	8,843,542	78.2	297,108	227,344	76.5	244,871	93,380
Total (3 mos.)	32,058,944	24,813,737	77.4	843,358	643,088	76.3	664,332	.....
April	10,474,300	8,311,710	79.4	275,100	221,079	80.4	211,304	84,513
May	10,893,272	8,733,965	80.2	286,104	242,394	84.7	224,366	73,157
June	10,893,272	8,199,515	75.3	286,104	228,646	79.9	228,252	77,782
July	10,474,300	7,992,170	76.3	275,100	201,153	73.1	209,976	79,492
Aug.	11,312,244	9,236,068	81.6	297,108	230,750	77.7	236,682	81,816
Sept.	10,055,328	8,344,464	83.0	264,096	224,971	85.2	234,449	87,097
Oct.	11,384,820	9,365,352	82.3	299,052	243,794	81.5	240,391	81,022
Nov.	10,541,500	8,666,458	82.2	287,976	241,924	84.0	248,147	93,203
Dec.	10,541,500	7,631,500	72.4	287,976	205,046	71.2	197,148	94,174
Total (year)	128,628,580	101,294,939	78.7	3,401,974	2,682,845	78.9	2,695,047	.....
1929								
Jan.	10,963,160	*9,120,972	*83.2	287,976	*246,890	*85.7	*232,686	*87,974
Feb.	10,119,840	*8,288,190	*81.3	279,600	*226,934	*81.2	*226,495	*87,726
March	10,963,160	9,237,882	84.2	287,976	254,218	88.3	264,995	96,209
Total (3 mos.)	32,046,160	26,647,044	83.1	855,552	728,042	85.1	724,176	.....

Year and Month	Shipments of boxboard Short Tons	Stocks of boxboard, end of month Short Tons	Consumption of waste paper: Capacity Short Tons	Consumption of waste paper: Consumed Short Tons	Per cent of Capacity	Stocks of waste paper, end of month: At plants Short Tons	Stocks of waste paper, end of month: In transit and unshipped purchases Short Tons
1928							
January	196,984	49,032	255,225	189,744	74.3	153,747	62,181
February	209,477	50,350	255,225	193,966	76.0	140,104	60,038
March	237,621	40,439	276,966	209,649	75.7	139,255	47,322
Total (3 mos.)	644,082	.....	787,416	593,359	75.4	.....	.....
April	220,315	40,319	256,450	211,898	82.6	132,621	47,551
May	235,794	49,107	266,708	220,750	82.8	127,217	46,375
June	223,901	53,560	266,708	204,468	76.7	130,484	43,480
July	203,741	49,969	256,450	190,810	74.4	132,265	62,056
August	233,104	47,709	276,966	213,626	77.1	117,009	48,108
September	228,880	45,271	246,192	217,361	88.3	116,197	53,344
October	245,133	43,627	289,440	240,930	83.2	127,989	73,235
November	235,228	47,693	268,000	222,693	83.1	136,100	49,982
December	197,029	55,624	268,000	196,164	73.2	148,906	43,447
Total (year)	2,667,207	.....	3,182,330	2,512,059	78.9	.....	.....
1929							
January	*246,098	*56,804	268,000	*238,652	*89.0	*137,251	49,104
February	*226,106	*57,398	247,440	*217,442	*87.9	*126,212	54,121
March	256,704	54,982	268,000	242,073	90.3	137,008	51,520
Total (3 mos.)	728,908	.....	783,440	698,167	89.1	.....	.....

* Revised.

Labor Difficulties of Natural Dam

GOUVERNEUR, N. Y., April 20, 1929.—Difficulties are being experienced at the mill of the Oswegatchie Paper Company at Natural Dam and the situation might well be called a strike of employees. The controversy in regard to the local situation might also be termed a virtual lockout on the part of the company, the officers of which announced the first of the year that they would be unable to continue unless employees of the mill would consent to a reduction of 20 per cent in the existing scale of wages. They also announced that if the workmen would consent to this reduction they would operate the mill on a steady schedule. The employees took the matter under consideration at a special meeting and although it met with some opposition the majority voted to accept the cut under the provision that steady employment would be assured. This decision was made about six weeks ago but the action of the local union was a short time later rescinded. The situation was again taken up at a meeting of the Northern New York Council held during the past week at this place. The union officials claim that they were unable to get any satisfactory assurances from the company and the strike situation was ordered which will affect the paper makers in the local mill only.

The employees claim that with the reduction suggested the minimum wage would be cut down to 32 cents an hour which would be for the common laborers. The machine tenders' scale was $1.12 and the backtenders pay was $1 an hour which would make these figures 90 cents and 80 cents respectively. While the skilled workmen would be able to live on the latter wage standard the common laborer with the mill working only on about a 50 per cent basis would not receive living wages, it is claimed.

A statement was made by officials of the company to the effect that the present conditions of the news print market would not warrant the operation of the mill at a profit even on the basis of the 20 per cent reduction and that they would operate at a loss if the mill was started at this time. In regard to the agreement to operate steadily at the reduced wage schedule the company maintains that the union rescinded its action in accepting the reduction only a few days after such acceptance giving them no opportunity to inaugurate a steady operation of the mill. They further state that if conditions improve sufficiently to operate, the mill will be started but the 20 per cent cut will still have to be kept in force. Many of the former employees have obtained employment in other localities while it was also learned that some have secured work on the state road project which will be launched shortly in this vicinity.

Holyoke Water Power Suit Partly Settled

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., April 30, 1929.—The suit in equity brought by the Holyoke Water Power Company against the Whiting Paper Company growing out of the sale of the Lyman Mills property to the paper company has been in part settled. New papers have been filed giving a quit claim deed of the mill equipment, land, etc., from the Lyman Mills to the Whiting Company and a final paragraph in the deed states that they will make no claim arising out of the original transfer December 6, 1927.

In this suit the Holyoke Water Power Company alleged that the Whiting Company was using more water than it was entitled to, that it did not have adequate title to the property and that it was threatening to manufacture electricity against the rights of the Holyoke Water Power Company.

A second suit in equity brought October 19, 1928, will probably be threshed out in the courts. To this the defendant company has filed interrogatories to which answers have been filed and a demurrer to the plaintiff's bill filed by the defendant corporation. The demurrer remains to be argued. Attorneys Bentley W. Warren of Boston and Avery Gaylord and Davenport appear for the plaintiffs and the Whiting Company is represented by Attorneys Brooks Kirby & Searle and Hurlbut Jones & Hall.

Zeloid Products Buys Two Mills

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., April 30, 1929.—The American Writing Paper Company, Inc., has sold to the Zeloid Products, Inc., two mills of its Riverside Division, the Nos. 1 and 3 mills on the third level canal. The new corporation proposes to engage in the manufacture of transparent papers from formulas and inventions of Dr. Charles Hetzel of New York City, formerly of Germany, who began the manufacture of transparent paper in his father's factories in that country. William J. Norton, treasurer of the American Writing Paper Company, has been chosen treasurer of the new concern. The organization is not fully complete but will be completed in a few days. Henry H. Peck of New York is secretary. The new corporation will be capitalized at $2,000,000.

It is expected that when fully organized and in full operation the new plant will employ 400 hands, 75 per cent of whom will be unskilled labor. One unit costing $250,000 and with a capacity of 1,000 pounds a day will be the initial venture. There is a wide market for the product it is said.

The work of remodeling the two mills bought for the new manufacture will be started at once and will probably be done by local contractors.

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New York Trade Jottings

Republic Bag and Paper Company, of 415 Greenpoint avenue, Brooklyn, N. Y., announce their return to their former offices at 200 Fifth Avenue, New York City.

* * *

The Manufacturers Paper Company announce the removal of their offices to the new Chanin Building, 122 East 42nd street, New York. Their new telephone number is Ashland 7452.

* * *

Parsons & Petit, selling agents of the Freeport Sulphur Company, of 26 Beaver street, New York, have just issued their annual statistical card on sulphur, pyrites and sulphuric acid, which includes prices, sulphur exports, etc., for 1928.

* * *

At the regular weekly luncheon and meeting of the New York Division of the Salesmen's Association of the Paper Industry, held last Monday at the Canadian Club, New York, matters of vital interest to the organization were discussed.

* * *

John E. Fox has moved his paper ruling plant from 226 Pearl street, to 272 Pearl street, New York, where he occupies the entire floor. He has been established for over fourteen years, devoting himself to paper ruling exclusively.

* * *

The Texas Gulf Sulphur Company, with headquarters at the New York Central Building, announces the removal of its purchasing department to Newgulf, Wharton County, Texas, effective April 22, and all correspondence pertaining to purchases, invoices, etc., should be forwarded to this new address.

* * *

Net profit of Lily-Tulip Cup Corporation for quarter ended March 31, 1929, was $93,216 after depreciation, federal taxes, etc., equivalent after dividend requirements on 7 per cent preferred stock to 48 cents a share on 183,000 no-par shares of common stock.

* * *

Old Timers Night of the New York Association of Dealers in Paper Mills' Supplies was held at the Hotel Brevoort, New York, on Tuesday, April 23, and proved a notable and successful event. The honor guests of the evening were George W. More, of George W. Millar & Co., Inc.; Charles R. MacBride, of the Wilson Paper Stock Company, Inc.; Frederick H. Chase, of Daniel M. Hicks, Inc.; Louis F. Darmstadt, of Darmstadt, Scott & Courtney, Inc.; George Carrizzo, of Brooklyn; Albert Salomon, of Salomon Bros. & Co., and Edward J. Smith, of E. J. Smith & Co. Four of these old timers—Messrs. More, Chase, MacBride and Darmstadt—have each put in 50 years in the paper stock industry.

* * *

International Hydroelectric System will make immediate application to the New York Stock Exchange for listing of 1,045,000 shares of Class A stock, of which 475,000 shares have been issued, and 570,000 shares are held in reserve for conversion of debentures. International Hydroelectric System is the new company recently formed as a subsidiary of International Paper and Power Company to control New England Power Association, serving the heart of industrial New England and Canadian Hydroelectric Corporation, Ltd., operating in a thriving and rapidly growing section in Quebec and the eastern part of Ontario between Ottawa and Montreal, and also in the Province of New Brunswick.

W. O. Dodd Leaves Consolidated Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., April 30, 1929.—Wesley O. Dodd, director and production manager of the carton division of the Consolidated Paper Company, Monroe, has resigned to take over an automobile sales agency in Phoenix, Ariz. He has been associated with the Consolidated Paper Company and its predecessors for 26 years and for 15 years on the board.

Graustein Explains Interest In Boston Papers

BOSTON, Mass., April 29, 1929.—The International Paper and Power Company has no intention of taking any hand in the management or editorial policy of the *Boston Herald* and *Boston Traveler*, President A. R. Graustein told the Joint Rules Committee of the Massachusetts Legislature today. Mr. Graustein appeared as a voluntary witness before the committee, which is considering a resolution for an investigation into the activities of Massachusetts power interests. He asserted that his company's recent purchase of an interest in the papers merely was for the purpose of furnishing an outlet for news print.

The *Herald* and the *Traveler*, he said, used about 30,000 tons of news print a year. In 1927 his company furnished only 10,000 tons of this, and in 1928 only 5,000 tons. In 1929 the question was not whether the company would be able to increase its order, but whether the company would be able to hold the 5,000-ton figure, Mr. Graustein said. "We did not buy the *Herald* and the *Traveler*, but we did buy an interest in them," he continued. "It is not an interest that gives us any say in the management or the editorial policy or the news policy of the papers."

Discussing the value of a connection between a paper company and a newspaper, Mr. Graustein said that the *New York Times* in the east and the *Chicago Tribune* in the west both were connected with large news print companies in order to insure a steady supply of news print.

During the last five years, Mr. Graustein told the committee, there had been a gradual decline in news print prices, due to competition. In 1928, he said, his company had a deficit of $4,706,403 after the dividends had been paid to preferred stockholders. He asserted that despite the transaction through which his company obtained an interest in the *Herald* and the *Traveler*, the control of those papers remained in the same hands.

Five years ago, Mr. Graustein said, manufacturers of news print were getting about $75 a ton, which gave them "a moderate profit." As result of steadily declining prices, he said, his company faced a real problem. Finally it was decided to modernize and diversify and thus obtain new outlets for the company's product. "Our company did not want anything to do with the management of the *Herald* or the *Traveler*," he said. "We had all we could do to run our own business."

Indianapolis Reports Spottiness

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., April 29, 1929.—Some spottiness appears to be developing in the paper business here. Some grades, notably the fine papers seem to be moving in good shape, but other grades are not so good. Print paper, now that conditions in this market seem to be fairly well stabilized, is moving nicely and likely will continue in steady volume so long as the present condition remains.

Some demand now is being noticed for purely summer merchandise. Such items as paper cups, plates, napkins and similar materials are beginning to move. This, of course, is merely the start, and the demand should improve each week with the coming of warmer weather.

A fair demand is reported in the board market in spite of the price situation, which just now is very unsatisfactory. The merchants are hoping prices will seek higher levels before long. Building papers also are beginning to increase in volume, though the demand is hardly better than it was this time last year. Ground wood papers are not moving to any extent and these provide perhaps the dullest spot in the market just now.

W. A. Anderson Made Vice President

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., May 1, 1929.—W. A. Anderson, production manager of the Allied Paper Mills, has been elected a director and vice president of the company. This action was taken at a regularly appointed meeting of the board of directors, according to Alex. G. Gilman, president, which was held Tuesday. Anderson succeeds Frank Mosteller.

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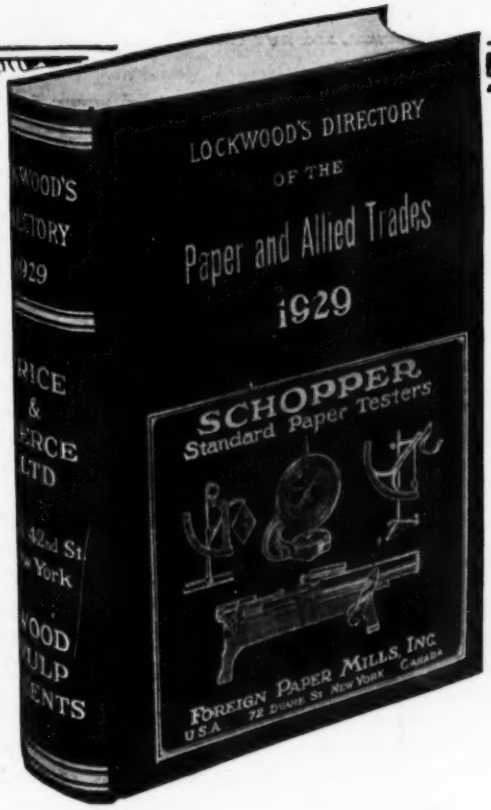

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NEW STUDIES IN FOREST ECONOMICS

With funds provided by the first formal appropriation recognizing the general field of forest economics, three new research projects will be launched by the Forest Service, United States Department of Agriculture, during the next fiscal year, which begins July 1.

The new undertakings will be: A comprehensive survey of the nation's forest resources and requirements; a study of the financial aspects of private forestry practice; and an investigation of forest insurance.

Although plans are still in the preliminary stages, it is intended to expand the forest economics work under the regional experiment station scheme of organization; and, as far as possible, men at work on economic projects will be assigned to the various forest experiment station staffs.

The forest survey project is designed to secure reliable data on: (1) Present and prospective requirements for forest products of all kinds: (2) the amount removed annually from the forests by cutting, and through losses by fire, disease, and insects; (3) the present growth on the nation's forests under existing conditions and the growth which might be secured under various land policies or intensities of forestry practice; (4) the area of forest lands classified according to their location and character of stand, and the volume of merchantable timber now available; and (5) certain phases of the distribution of forest products and of other economic relationships.

"The country needs much more specific data for building adequate policies and plans for the utilization of forest lands and for the practice of forestry," according to R. E. Marsh, in charge of Forest Economics in the Forest Service. "Our present situation is much like that of a big business which lacks specific knowledge of its resources, its income, and its outgo. The forest survey is designed to determine what should be done about the situation by the National Government, the States, and various industries. Many States and counties are currently struggling with land problems, the solution of which needs the basic information to be secured by the forest survey. The information is needed also by countless wood-using industries which are at a loss to foresee future markets for their products or continued supplies of raw material.

Altogether, the forest survey is one of the biggest and most far-reaching undertakings in the development of forestry yet initiated, and it can be made the foundation for a large part of all future forest activities. It is a comprehensive appraisal of the existing forest conditions and requirements and of present and future trends, all of which properly coordinated will point out the action needed for striking a balance in our national timber budget.

It is proposed to initiate the forest survey project in the Pacific Northwest, and later extend it to all forest regions as funds are made available.

The study of the financial aspects of private forestry practice will be undertaken to determine the economic factors upon which commercial timber growing can be soundly based. It will involve investigations of local timber supplies, consumption of forest products, transportation factors, trend of timber values, and the probable costs and returns from forestry practice. The study will eventually cover all the important regions of the United States, but will be concentrated at the start in the southern pine region.

Subject to a preliminary period of exploration, the forest insurance study will be concentrated in one region—probably the Pacific Northwest—before expansion to a nation-wide basis. Fire hazard will probably be one of the first problems in this study. The investigation will give the foundation for zoning forest areas so that appropriate insurance rates can be applied. The problem of damage appraisal also will be studied.

Aside from a few specific projects in land classification and statistics, the only comprehensive investigation in forest economics now under way in the Forest Service is the forest taxation inquiry which has been going on for the last three years under the direction of Dr. Fred R. Fairchild. Forest economics is the major field of forest research in which the least work has been done, according to the Forest Service.

The agricultural appropriation bill recently enacted provides $65,000 for the forest survey and private forestry studies during the next fiscal year under the authorization of the McSweeney-McNary Act of 1928. This act authorizes a maximum appropriation of $3,000,000 in all for the forest survey, to be expended at a maximum rate of $250,000 a year. The first year's appropriation will permit the organization of a skeleton force, and the actual initiation of field and office work.

An additional $10,000 from the appropriation will be allotted to the forest insurance study, under authorization of the Clarke-McNary Act of 1924.

CUSTOMS PAPER DECISIONS

Some important Customs Court decisions affecting paper have recently been made public, an unusual one being a ruling that cellophane is not a greaseproof paper as claimed by the importers. This commodity has been held to be dutiable as a compound of cellulose dutiable at 60 per cent by the United States Customs Court, but an appeal has been taken to the United States Court of Customs Appeals.

Chief Justice Fischer of the United States Customs Court has held that nearly 100 shipments of candy box padding were undervalued. The importers have appealed this case also.

Importers of ruled writing paper endeavored to secure a low rate of duty on such paper by describing it as printed paper, but the Customs Court approved the appraiser's classification.

Scotch wove and laid book papers were held to be undervalued.

Flint glazed paper was held to have been undervalued.

The Import Committee of the American Paper Industry which was active in the trial of the cases listed has also disclosed to Government officials importations in the south of book paper, free of mechanical pulp, which were imported as standard news print, duty free, though this paper is sold to the customers at upward of $5.35 per hundred pounds.

A southern United States District Attorney has taken steps to force an importer of wrapping paper to pay a large amount of duty which the importer refused to pay on the assertion that it was improperly classified for duty. This is an unusual procedure as only in exceptional cases are customs collections handled by United States attorneys.

Microscopic Structure of Wood

Researches on the microscopic structure of wood that may have important applications in paper making, rayon manufacture, and other pulp-using industries were described by Dr. G. J. Ritter at the government forest research conference in session at the Forest Products Laboratory at Madison, Wis., recently.

It has long been known that wood is largely made up of fibers in the form of tiny elongated hollow cylinders, and that these fibers can be divided into still smaller units called fibrils, running lengthwise of the fibers with a slight twist something like the wrapper of a cigar.

By means of a carefully controlled process of chemical disintegration Dr. Ritter has been able to show that the portion of the fiber previously recognized as a fibril is only one of several layers. Not only were other internal layers released when wood fibers were carefully treated with chemicals, but an unsuspected outer layer was discovered twining around the whole fiber very much like the spiral puttee of a soldier's uniform.

During his demonstration at the conference Dr. Ritter displayed photomicrographs of fibers that had been separated not only into various layers of fibrils but in which the minute strands of the fibrils themselves had been separated into short lengths shaped like toothpicks. These units, called "fusiform bodies" and visible only under the highest power microscope, are believed by Dr. Ritter to have been photographed and separated for the first time in his investigation.

Practical applications of the new knowledge of fiber structure are already apparent, Dr. Ritter pointed out. Most of his work has been done on fibers of sulphite pulp. He found that the rate of disintegration of fibers by his method gave a direct index to the character and severity of the chemical and mechanical treatment to which the wood had already been subjected in the pulping process. This is the key fact that is expected to lead to a new technic for judging the quality of pulps for a wide range of practical uses.

Further studies of the structure within the fiber, Dr. Ritter stated, are to make use of the X-ray. By this means he hopes to determine the nature of the cementing substance between the fibril bundles, information that would probably throw much new light on the nature and control of pulping processes.

Subpoenas International Officials

WASHINGTON, D. C., May 1, 1929.—W. N. Hurlburt, vice president, and John R. Macomber, director, of the International Paper and Power Company, have been subpoenaed to appear before the Federal Trade Commission in connection with the purchase of the *Boston Herald* by the company. The witnesses are to appear in connection with the investigation of the Commission into public utilities and its activities.

Introduces Farm Waste Bill

WASHINGTON, D. C., May 1, 1929.—A bill has been introduced in the Upper House by Senator Schall of Minnesota for the utilization of farm waste in the manufacture of paper. The bill, which has been referred to the Senate Committee on Agriculture and Forestry, of which Senator McNary of Oregon is chairman, is as follows:

Authorizing an appropriation to encourage the utilization of farm waste for the production of paper by aiding farmers and local chambers of commerce to develop the manufacturing of paper pulp from waste crops.

Whereas it has been necessary for a number of years past in order to supply our national demand for various kinds of paper to import annually into this country approximately two million tons, either in the form of finished product or in pulp; and

Whereas owing to the constantly diminishing supply of spruce and hemlock in this country and the increasing demand for paper each year this amount of import will soon greatly exceed the present figure; and

Whereas each year this country raises but does not utilize more than enough waste farm crops to produce this paper; and

Whereas the utilization of these farm wastes would mean many millions of dollars to the farmers of this country; Now therefore

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sum is hereby authorized to be appropriated by the Secretary of the Treasury for the purpose hereinafter specified:

That the sum of $20,000,000 be loaned in amounts not to exceed $100,000 each at 4 per centum interest for a period of twenty years to certain organizations of local chambers of commerce and farmers under the following conditions:

First. Whenever within a territory comprising nine hundred square miles, in which there is annually a production of fifty thousands tons or more of such waste field crops, as cornstalks, cotton stalks, tobacco stems, straws of all kinds, or sugar-cane pulp; and when in such territory a sufficient number of farmers in written contract shall bind themselves together to deliver to any selected site fifty thousand tons or more of these waste crops yearly for a period of five years or more, with the express desire of producing pulp for paper making under the direction of a committee of business men appointed by the local chamber of commerce or commercial club, such action shall constitute the organization of local chambers of commerce and farmers above referred to, and this organization so formed and incorporated shall be entitled to the benefits under this Act.

Second. This organization shall agree to erect a pulp mill containing such machinery as it has been demonstrated at the Iowa Agricultural College at Ames, Iowa, in conjunction with the Federal Government, will produce pulp for paper, and for the purpose of erecting such a mill and putting it into operation the Treasurer of the United States shall loan such organization not to exceed $100,000 at 4 per centum interest for the term specified above.

Third. The Secretary of the Treasury is hereby authorized to make such investigations and rules as are necessary to put the Act into effect.

Taylor Paper Co. Leases Building in Fort Worth

MEMPHIS, Tenn., April 30, 1929.—The Taylor Paper Company has signed a ten year lease on a building in Fort Worth, containing approximately 60,000 square feet of store space. The building is now being prepared for occupancy and the company expects to be in operation with a new house there by June 1.

The company will carry in Fort Worth a full line of paper for printers and also a general assortment of stock in the wrapping and coarse line.

Virgil Buzard, who has been with the company for many years, will manage the Fort Worth house. J. A. Evans, asistant credit man in Memphis, will be in charge of credits in Fort Worth.

CONFIDENCE

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Edited by
RONALD G. MACDONALD, Secretary

Control and Evaluation of Sulphite Pulp Quality

(Concluded from last week)

By C. P. Genberg[1] and E. O. Houghton[2]

Having thus described and discussed the methods of controlling the quality of our product, we will now take up the relation of these factors to the various steps of manufacture and the effects of the latter on the chlorine number and strength properties of the pulp.

Relation to Cooking Procedure

The digestion of chips by the sulphite process must be carefully controlled if pulp of a definite quality is desired. Slight variations in the cooking procedure will result in quite large variations in the final product obtained. The factors which must be watched are: the condition of the chips; the composition of the cooking acid; the temperature and time of digestion. The influence of pressure is slight[22] and for practical reasons is kept constant, or nearly so, during the cooking process. Any variation in one of the above factors can usually be compensated for by a corresponding change in the other variables, thus giving a more or less uniform product.

The condition of the chips as regards size and moisture content effects the rate of penetration of the cooking acid, which is an important factor in the early part of the cook.[23] Miller and Swanson[24] have shown conclusively that the temperature has a far greater influence on the quality of the pulp than the composition of the acid. Increased temperature necessitates a shortening of the cooking time when making a uniform pulp. The effect of increased acid concentration is in the same direction but is more important at the beginning of the cook where it aids the penetration very materially. Strong pulps generally require a fairly long cooking time and low temperature, a weaker fiber being produced if the temperature is too high. Strong pulps also result from undercooking but in this case the product contains much lignin and is difficult to bleach. Easy bleaching pulps, on the other hand, usually have low strength properties due to the pulp being cooked down too far, resulting in an attack on the cellulose fibers. A concise discussion of the relations between cooking conditions and the quality of the pulp produced has been given by Miller[25] and Swanson[26] who both lay great stress on the use of as low a temperature as is consistent with the cooking time in use.

A period of comparatively low production recently offered an opportunity to investigating the relative effects of long and short cooking times on the yield, bleachability, and strength of sulphite pulp. The results obtained are given in Table 16 and cover average cooking times of 16 and 10 hours. These results should be quite conclusive being as they are, average figures for several days run under each condition. The fact that no difference in yield is shown can be attributed to the temperature effect, there being an increase of about 10 deg. C. for the shorter cooking time. At the longer cooking time a much lower chlorine number is obtained, that is, the pulp cooked for 16 hours is more easily bleached than that cooked for 10 hours even though the former has a considerably

[22] Miller & Swanson, P. T. J., Oct. 16, 1924.
[23] Birchard, P. T. J., Sept. 22, 1927.
[24] P. T. J., Oct. 11, 1923; April 10, 1924.
[25] P. T. J., Dec. 3, 1925.
[26] P. T. J., Nov. 25, 1926.

TABLE 16
EFFECT OF COOKING TIME ON BLEACHABILITY AND STRENGTH OF SULPHITE PULP

	Blow Test	Cooking Time	Chlorine Number	Per ent Bleach	Ratio Chlorine No. : Bleach	Bleaching Temp. Deg. F.	Bleaching Time	Mullen	Tear	Total Strength
Long Cooking Time	.27	14:45	4.08	19.4	1:4.75	97	10:34	109	140	71
	.29	15:20	3.08	15.1	1:4.90	98	7:04	112	138	71
	.26	14:12	2.61	13.3	1:5.10	96	6:18	104	131	67
	.27	15:16	3.78	15.1	1:4.00	98	8:13	112	163	78
	.28	17:10	3.12	14.7	1:4.72	97	8:25	112	137	71
	.29	17:10	2.97	14.0	1:4.72	98	9:10	105	131	68
	.28	16:50	2.82	14.2	1:5.03	97	9:37	104	146	71
Average	.28	15:49	3.21	15.1	1:4.70	97	8:28	108	141	71
Short Cooking Time	.17	10:54	4.78	21.3	1:4.46	99	8:19	104	148	72
	.15	10:49	3.66	19.2	1:5.25	99	7:32	107	136	70
	.10	10:27	2.94	18.0	1:6.13	100	7:00	100	134	67
	.17	9:42	3.52	16.5	1:4.70	98	7:53	100	132	65
	.23	10:13	4.47	23.6	1:5.28	101	6:33	104	148	72
	.19	10:09	4.93	23.6	1:4.78	101	6:01	110	135	70
	.18	10:14	4.51	22.5	1:4.98	100	6:56	110	145	73
	.17	9:56	4.76	22.7	1:4.77	100	6:38	101	147	71
	.17	9:44	4.48	24.0	1:5.35	100	4:18	104	145	71
Average	.17	10:13	4.23	21.3	1:5.03	100	6:53	104	141	70

higher blow-test. The bleachability of the short cooked pulp is, in fact, 41 per cent higher. The ratio of chlorine number of bleach consumption while about the same, is slightly higher at the short cooking time. This is probably due to the shorter bleaching time and the consequent use of excess bleach to obtain the same color. The difference in bleaching conditions has undoubtedly equalized any effect of the cooking time on the strength of the finished pulp, these properties being the same for both periods of digestion.

Some further figures on the relation of the cooking time to the strength and chlorine number are given in Table 17; the strength figures in this table were obtained by the beaten method of testing, the pulp being beaten for one hour in a ball mill. While no appreciable differences can be noticed from these figures, the conclusion can possibly be drawn that a longer cooking time results in a pulp of higher mullen and lower tear and freeness. The chlorine number decreases slightly with increase in cooking time. One definite advantage of the longer cooking time which is not apparent from the tables, is that the variation in the individual cooks is not so large as for the short cooking time, more uniformity being obtained in the first instance.

TABLE 17
COOKING TIME VIA MULLEN, TEAR AND CHLORINE NUMBER

Cooking Time	Mullen	Tear	Freeness	Chlorine Number
10½	110	196	57.6	3.8
11	107	158	40.5	2.9
11¼	108	151	43.3	2.9
11½	110	146	41.5	2.8
11¾	109	142	40.4	2.9
12	108	147	43.0	3.0
12¼	112	141	42.3	3.1
12½	109	141	41.2	3.1
13	110	137	42.2	2.9
13¼	116	138	37.6	2.8
13½	111	144	38.8	2.9
13¾	115	129	33.8	2.9
14	111	128	39.4	2.7
14¼	107	125	41.6	2.5
15¾	124	126	43.1	3.6

We had occasion some time ago to duplicate a European sulphite of low bleachability. This pulp was cooked 18 to 20 hours at a temperature not exceeding 135 deg. C. and had a chlorine number of 1.70 per cent which corresponds to a bleach consumption of 8.6 percent. The total strength of the unbleached pulp was 58 and this increased 14 points on bleaching to give a value of 72. After a few trials which always give a pulp of higher unbleached strength we finaliy succeeded in duplicating the unbleached conditions fairly closely as can be seen in Table 18, Pulp A. This pulp was cooked 8-8½ hours. However on bleaching it increased only 3 points in total strength compared with 14 for the foreign pulp.

TABLE 18

	European Pulp	Pulp A	Pulp B
Chlorine number	1.70%	2.11%	2.26%
Bleach consumption	8.6%	10.0%	10.0%
Strength unbleached	58	57	61
Strength bleached	72	60	70

As a result of further trials we came to the conclusion that our pulp did not need to be cooked down to as low a chlorine number as the foreign pulp to bleach with 10 per cent bleach. We found, in fact, that a chlorine number of 2.3—2.5 per cent gave as good a colour with 10 per cent bleach as one of 2 per cent or less. This, no doubt, is due to the staining of the fibers by the very dark liquor resulting when the pulp is cooked down to a very low SO^2 content. This condition necessitates the use of some bleach to counteract the staining effect. We finally found that, by cooking at least 9 hours to a chlorine number of 2.3—2.5 per cent, we obtained a pulp that could be bleached to a satisfactory white with 10 per cent bleach and which gave after bleaching a total strength similar to that desired. These conditions gave the results shown in the third column of Table 18; these results are the average of several runs. This investigation bears out the fact that a slow and careful cook at a low temperature produces a pulp of both satisfactory strength and low bleachability, a condition which is difficult to duplicate at a short coking time and the increased temperature requisite for the high degree of lignin removal desired.

As has been pointed out before the degree of delignification, which of course depends on the cooking procedure, has a decided effect on the strength properties of the pulp. The more lignin present in the fibers, that is, the higher the chlorine numbers, the greater is the mullen test obtained as is shown in Fig. 10. As was mentioned in the discussion on the relation between the chlorine number and initial strength, the tear, and freeness may have the same value at both high and low chlorine numbers. These two properties depend on the hydration qualities of the fibers which in turn are dependent to a large extent on the method of cooking. The fact that there is no relation between strength properties and chlorine numbers for different grades of unbleached sulphite can be attributed to the varying cooking procedures used in different mills.

Relation to Bleaching Procedure

The purpose of bleaching sulphite pulp is two-fold, namely, to remove the small amount of incrusting materials which remain on the fibers after the cooking process, and to produce a satisfactory colour. The operation must be so controlled that no detrimental effects are obtained, otherwise the pulp resulting would be low in strength due to the degradation of the cellulose fibers by the action of the bleach liquor. There are many factors affecting the bleaching process; chief of these are the consistency of the pulp, temperatures and time of bleaching, purity of the pulp fibers, and the intimate mixing of the bleach liquor with the pulp. The latter is particularly important at the beginning of the reaction.

Sulphite pulp is usually bleached with an alkaline solution of calcium hypochlorite, prepared either by dissolving bleaching powder in water or adding chlorine gas to a milk of lime suspension. While the bleaching action is generally regarded as an oxidation process caused by the liberation of nascent oxygen from hypochlorous acid[37] it is possible that chlorination also occurs to a certain extent, the two reactions being in chemical equilibrium.[38]

As was mentioned above, calcium hypochlorite is usually employed in commercial bleaching; the use of sodium hypochlorite, however, has been advocated in some instances. It is claimed that the latter produces a pulp of better colour, higher alpha cellulose content, and less pitch and ash. Recently we carried out some tests on two stage bleaching at 5 per cent consistency with a bleach ratio of 1:4.0 to give a colour of 75. After washing, the samples were divided into two portions and bleached at 10 per cent consistency with calcium and sodium hypochlorite respectively, the bleach ratio being 1:1.0 only. As a result of these experiments we found that the pulp bleached with sodium hypochlorite gives a slightly brighter colour and much higher strength properties. This can be seen from Table 19.

TABLE 19

	Mullen	Tear	Total Strength	Color
Ratio 1:4.0	89	203	83	75
Soda Bleach	84	197	80	95
Lime Bleach	81	185	76	95

The alkalinity of both bleach liquors was adjusted to the same value and all experiments were carried out under definite temperature conditions. The rate of exhaustion of bleach was the same whether sodium or calcium hypochlorite was used.

The bleaching process has a decided effect on the strength properties of sulphite pulp. Normal bleaching increases the total strength slightly in most cases, while the smallest excess of bleach lowers the strength appreciably due to the formation of degradation products such as oxy-cellulose, etc. The changes in strength after bleaching are given in Table 20. These are the results of actual runs made in the mill, the bleaching being done in bellmers at about 5 per cent consistency. This table shows definitely the effect of overbleaching, the bleach ratio for normal bleaching being, in our case, between 1:5.0 and 1:5.5. Above this ratio there is a decided decrease in strength after bleaching. The abnormal figures for samples 8 and 10 are probably due to too high a temperature being used during the bleaching. A high tempera-

[37] Curran & Baird, P. T. J., July 3, 1924.
[38] Rys, P. T. J., Nov. 3, 1927.

TABLE 20
EFFECT OF BLEACHING ON STRENGTH PROPERTIES OF SULPHITE
(Varying ratio between chlorine number and bleach)

Case No.	Chlorine Number	Per Cent Bleach	Ratio Cl. No.: Bleach	Unbleached Mullen	Unbleached Tear	Unbleached Total Strength	Bleached Mullen	Bleached Tear	Bleached Total Strength
1	2.07	19.7	1:9.5	74	203	79	85	105	54
2	2.03	17.4	1:8.6	75	190	76	97	139	68
3	2.86	19.4	1:6.8	67	188	73	97	137	67
4	3.60	20.3	1:5.7	85	187	78	95	169	75
5	3.93	21.3	1:5.5	85	182	76	108	158	76
6	4.03	20.5	1:5.1	90	177	76	103	173	79
7	4.17	21.2	1:5.1	86	178	75	102	188	83
8	4.60	23.0	1:5.0	86	207	84	95	184	80
9	5.59	24.6	1:4.4	99	158	73	111	166	79
10	5.37	21.5	1:4.0	101	182	81	105	164	77

ture causes a more drastic action of the bleach liquor on the pulp with a consequent lowering of the fiber strength.

The progressive change in strength properties during bleaching is shown in Table 21.

TABLE 21

Hours, Bleaching	Bleach Per cent Consumed	Lignin Per cent (Cl_2 No.)	Ratio	Mullen	Tear	Total Strength
0	....	2.86	....	67	188	72.8
1	8.80	1.55	1:3.1	82	190	77.7
2	13.61	.42	1:4.8	100	165	75.7
3	15.25	.34	1:5.3	100	156	73.2
4	16.93	.22	1:5.9	99	152	72.7
5	18.48	.12	1:6.5	98	144	69.2
6	18.62	.14	1:6.6	97	137	66.8

This table brings out clearly the drop in total strength when an excess of bleach is present as was the case during this run, the total bleach added being 21.2 per cent or a ratio of 1:7.43. Table 22 gives the results of another run using a more normal ratio of 1:5.9 or 17.8 per cent bleach

TABLE 22

Hours, Bleaching	Bleach Per cent Consumed	Lignin Per cent Cl_2 No.	Mullen	Tear	Total Strength	Alpha Cellulose
0	....	3.03	73	167	67	88.15
1	7.86	.78	112	173	81	88.46
2	13.55	.25	108	153	75	88.04
3	15.75	.16	109	134	70	87.46
4	16.55	.13	104	140	70	86.89
5	17.25	.04	103	140	70	86.85
6	17.48	.04	101	138	68	86.33
7	17.72	.00	103	137	69	86.20
8	17.80	.00	100	140	69	85.96

In this case the total strength increases at first, then drops to a constant value, which is slightly higher than that for the unbleached pulp. The change in Alpha Cellulose content during bleaching is also shown in this table.

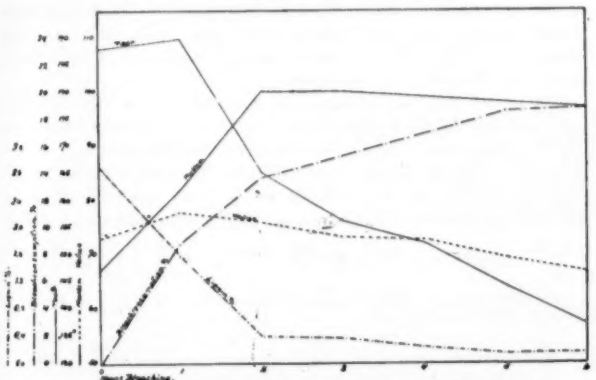

Figure 11- Progressive Change in Strength Properties during Bleaching.

This property of the pulp decreases continually during the bleaching. At first thought this may seem peculiar since the lignin content decreases with increase in bleaching time as shown. As the bleaching proceeds, however, the cellulose is attacked to a continually larger extent and hence the Alpha Cellulose value drops. The effect of overbleaching on the purity of the pulp fibers is brought out more clearly in Table 23. In these tests the bleaching has been carried to excess causing a greater decrease in the Alpha cellulose content of the pulp.

TABLE 23

Hours, Bleaching	Per cent Bleach Consumed	Per cent Lignin Cl_2 No.	Alpha Cellulose
0	....	2.84	88.18
1	7.55	.97	87.97
2	13.05	.47	87.37
3	16.27	.26	85.49
4	18.06	.26	84.22
5	19.45	.23	82.73

Figs. 11 and 12 depict these results graphically, giving a clear conception of the progressive change of the characteristic pulp properties during bleaching.

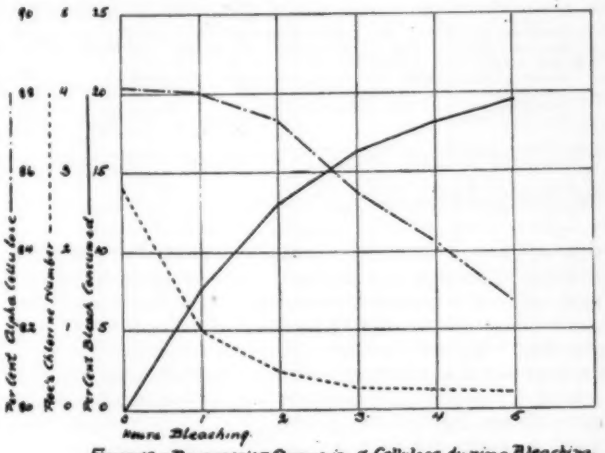

Figure 12 - Progressive Change in α-Cellulose during Bleaching.

The effect of bleach ratio and the bleaching temperature is brought out further in Table 24, which gives the average figures

TABLE 24
EFFECT OF BLEACH RATIO AND BLEACHING TEMPERATURE ON STRENGTH AND COLOR OF BLEACHED PULP

Number	Bleach Consumption per cent	Bleaching Temperature deg. F.	Total Strength	Color
1	21.6	107	72	90
2	20.0	107	69	90
3	21.3	106	66	90
4	21.7	105	63	90
5	18.2	99	68	..
6	17.0	97	71	85
7	19.1	99	69	85
8	20.1	100	68	88
9	17.6	95	71	85
10	20.0	99	70	85
11	17.8	91	74	87
12	18.8	92	73	86
13	17.1	84	75	86
14	14.4	84	75	86

relative to the pulp quality. The table shows that by cutting down the bleaching temperature, less bleach could be used without much decrease in colour and that this resulted in a definite increase in the strength of the bleached pulp.

The use of two stage bleaching with intermediate washing in place of single stage bleaching appears to lower the strength properties slightly when using the same bleach ratio as may be seen from Table 25. The values given in this table are the average of a number of bleach tests on pulps of varying chlorine numbers. The alpha cellulose content is also decreased somewhat, but the colour is much better when using the same amount of bleach as was the case in these tests. The experimental conditions used in the tests from which these results were obtained are shown in Table 26.

TABLE 25
RELATIVE EFFECT OF SINGLE AND DOUBLE STAGE BLEACHING ON PULP QUALITIES

System	Ratio	Mullen	Tear	Total Strength	Color	Alpha Cellulose
Single	1:4.5	73	188	74.5	81	86.70
Double	1:4.5	71	187	73.7	86	86.18
Single	1:5.5	71	172	69.5	85	85.76
Double	1:5.5	68	168	67.2	90	85.72

However, referring again to Table 25 and comparing the results obtained with a ratio of chlorine number to bleach consumption of 1:4.5 using double stage bleaching, with those using a 1:5.5 ratio and a single stage bleaching, (that is, with less bleach consumption in the former case) it will be seen that the

TABLE 26

BLEACHING CONDITIONS OF TESTS ON SINGLE AND DOUBLE STAGE BLEACHING

Chlorine Number	4.22%		2.43%		1.70%		6.28%	
Ratio Chlorine:Bleach	1:4.5	1:5.5	1:4.5	1:5.5	1:4.5	1:5.5	1:4.5	1:5.5
Single Stage:—								
Bleach added of total	100%	100%	100%	100%	100%	100%	100%	100%
Temperature	95° F.	100° F.	95° F.	100° F.	95° F.	100° F.	95° F.	100° F.
Consistency	5%	5%	5%	5%	5%	5%	5%	5%
Bleaching time	4 hours	4¾ hours	3 hr. 25 m.	3 hr. 50 m.	5 hours	6 hours	5½ hours	6 hours
Double Stage:—								
First Stage:								
Bleach added of total	70%	70%	70%	70%	70%	70%	70%	70%
Temperature	80° F.	80° F.	80° F.	80° F.	80° F.	80° F.	80° F.	80° F.
Consistency	10%	10%	10%	10%	10%	10%	10%	10%
Bleaching time	2¼ hours	2¾ hours	1 hr. 36 m.	2 hr. 10 m.	2 hours	3½ hours	2½ hours	4¼ hours
Second Stage:								
Bleach added of total	30%	30%	30%	30%	30%	30%	30%	30%
Temperature	95° F.	100° F.	95° F.	100° F.	95° F.	100° F.	95° F.	100° F.
Consistency	5%	5%	5%	5%	5%	5%	5%	5%
Bleaching time	5 hours	4¾ hours	4 hr. 24 m.	5 hr. 5 m.	4¾ hours	4¾ hours	6¼ hours	7½ hours
Total Bleaching Time Double Stage Bleaching	7¼ hours	7½ hours	6 hours	7¼ hours	6¾ hours	8¼ hours	8¾ hours	11¾ hours
Total Bleaching Time Single Stage Bleaching	4 hours	4¾ hours	3 hr. 25 m.	3 hr. 50 m.	5 hours	6 hours	5½ hours	6 hours

pulp bleached in two stages compares favorably in every way with that bleached in a single stage. The total strength is higher when the pulp is bleached in two stages, bearing out the aforementioned detrimental effect of higher bleach ratios on the strength properties. The colour is slightly higher even although less bleach has been used, while the alpha cellulose content has also increased somewhat, showing that in double stage bleaching the cellulose fibers are not degraded to the same extent as in the single stage where more bleach is used.

It is interesting to note that less time is required to exhaust the same amount of bleach in single stage than in double stage bleaching. This is undoubtedly due to the slower rate of reaction in the second stage caused by the low concentration of the reacting substances, that is, the bleach and lignin and impurities. The intermediate washing has removed some compounds which would ordinarily absorb bleach; if however, the same amount of bleach is added regardless of this, the result is a higher color, as shown in Table 25, and a slightly lower strength, due to the action of the bleach on the cellulose fibers instead of on the products formed by the preliminary action of the bleach. Taking into account the removal of bleach absorbing compounds by washing, it will be understood why, in two stage bleaching, less bleach is required to give the same final colour as that obtained in single stage bleaching. This saving in bleach consumption is a well-known characteristic of two stage bleaching.

The saving in time when using two stages, as is claimed in some quarters, is not so apparent from our investigation. The results of one series of tests are given in Table 27 and again it may be seen that the single stage bleach requires a shorter time. All our tests, however, were carried to exhaustion and the difficulty of exhausting the final trace of bleach is clear from the table. When bleaching to a certain definite color, and hence using less bleach

TABLE 27

RELATIVE BLEACHING TIMES FOR SINGLE AND DOUBLE STAGE BLEACHING

Chlorine Number	Bleach added 1st stage, per cent	Ratio bleach : Chlorine number	Time to exhaust, minutes	Bleach exhausted per hour	Bleach added 2nd stage	Ratio bleach : Chlorine number	Time to exhaust, minutes	Bleach exhausted per hour	Total bleaching time, minutes
2.53%	2.53	1:1.0	37	4.11	6.35	1:2.5	319	1.19	356
	3.80	1:1.5	51	4.48	5.06	1:2.0	318	0.96	369
	5.06	1:2.0	95	3.20	3.80	1:1.5	368	0.62	463
	6.33	1:2.5	152	2.50	2.53	1:1.0	383	0.40	535
	8.86	1:3.5	270	1.97	...	....	...	...	270
3.51%	3.51	1:1.0	33	6.39	8.77	1:2.5	288	2.01	321
	5.26	1:1.5	42	7.52	7.02	1:2.0	286	1.47	328
	7.02	1:2.0	72	5.85	5.26	1:1.5	315	1.00	387
	8.77	1:2.5	114	4.62	3.51	1:1.0	332	0.64	446
	12.28	1:3.5	200	3.69	...	....	...	...	200
4.52%	4.52	1:1.0	21	12.90	11.30	1:2.5	260	2.61	281
	6.78	1:1.5	37	11.00	9.04	1:2.0	310	1.75	347
	9.04	1:2.0	95	5.72	6.78	1:1.5	325	1.25	420
	11.30	1:2.5	117	5.80	4.52	1:1.0	350	0.78	467
	15.82	1:3.5	230	4.12	...	....	...	...	230
6.00%	6.0	1:1.0	19	18.94	15.00	1:2.5	310	2.90	329
	9.0	1:1.5	41	13.20	12.00	1:2.0	315	2.29	356
	12.0	1:2.0	77	9.35	9.00	1:1.5	315	1.72	392
	15.0	1:2.5	111	8.12	6.00	1:1.0	318	1.13	429

in the two stage system, the big discrepancy in bleaching time would become less but, judging from our researches, it seems difficult to believe that any actual saving in time could be accomplished by bleaching in two stages.

The above only holds when the consistencies of the two systems are the same; a high pulp consistence, of course, decreases the bleaching time due to the increased concentration of the reactants.[29] This is brought out in Table 28, which gives the results of a series of bleach tests which were carried out to determine the relative effects of high and low consistencies, in the

[29] Curran & Baird, P. T. J., April 14, 1927.

TABLE 28

EFFECT OF CONSISTENCY ON BLEACHING TIME AND PULP QUALITIES

Chlorine Number	2.68%		3.32%		4.66%		5.69%	
1st Stage:—								
Ratio	1:3.15	.....	1:3.15	.....	1:3.15	.....	1:3.15	.....
Per cent Bleach	8.45%	.....	10.45%	.....	14.70%	.....	17.90%	.....
Consistency	6%	.....	6%	.....	6%	.....	6%	.....
Temperature	85° F.	.....	85° F.	.....	85° F.	.....	85° F.	.....
Bleaching time	2 hr. 10 m.	.....	2 hr. 55 m.	.....	2 hr. 45 m.	.....	3 hours	.....
2nd Stage:—								
Ratio	1:1.35	1:1.35	1:1.35	1:1.35	1:1.35	1:1.35	1:1.35	1:1.35
Per cent Bleach	3.62%	3.62%	4.48%	4.48%	6.30%	6.30%	7.68%	7.68%
Consistency	6%	15%	6%	15%	6%	15%	6%	15%
Temperature	95° F.	95° F.	95° F.	95° F.	95° F.	95° F.	95° F.	95° F.
Bleaching time	5 hr. 45 m.	3 hr. 30 m.	6 hr. 30 m.	4 hr. 15 m.	6 hr. 45 m.	4 hr. 10 m.	7 hours	4 hr. 30 m.
Color	87	88	89	90	90	89	89	89
Mullen	73	66	81	71	77	68	86	74
Tear	163	169	138	162	153	142	147	160
Total strength	67	67	63	67	66	60	67	67
Alpha cellulose	87.98%	87.91%	86.63%	85.93%	85.79%	85.20%	86.21%	85.15%
Total bleaching time	7 hr. 55 m.	4 hr. 40 m.	9 hr. 25 m.	7 hr. 10 m.	9 hr. 30 m.	6 hr.55 m.	10 hr	7 hr. 30 m.

second stage of a two stage bleach, on the quality of the pulp. The total bleaching time, as can be seen, was decreased considerably when using the higher consistency in the second stage. The color of the product was the same regardless of the consistency used or the bleaching time required. The effect of the two consistencies on the alpha cellulose content of the bleached pulp was quite definite, there being no doubt that the use of a high consistency in the second stage lowered the alpha cellulose value from 0.5 to 1.0 per cent.

The total strength of the pulp obtained was practically the same at the two consistencies, in one case being slightly higher and in one lower, when bleached at 15 per cent consistency. The latter result, however, appears abnormal due to the lower tear when bleached at 15 per cent. Except for this discrepancy, in all cases, the tear increased and the mullen decreased with increase in consistency from 6 per cent to 15 per cent. This would seem to indicate greater hydration of the stock when bleached at 6 per cent consistency. At first sight this may appear peculiar since stock bleached at a high consistency is usually the more hydrated. In actual practice, however, the stock is being constantly agitated and this, particularly at high consistencies, increases the hydration effect. In these experiments there was no mixing except at the start and occasionally thereafter, to ensure an even penetration of the bleach.

The effect of the consistency on the strength properties and alpha cellulose content was further brought out by bleaching experiments in single stage at varying consistencies, the results of which are given in Table 29.

Two samples of sulphite pulp with chlorine numbers 3.78 per cent and 4.40 per cent were bleached in a ratio of 1:5.0 corresponding to 18.9 per cent and 22.0 per cent bleach respectively at 6 per cent 11 per cent and 17 per cent consistency. In order to compensate for the increased velocity of the bleaching reaction due to higher consistency the bleaching temperatures were decreased as the consistency was increased, which is the practice in commercial operations. Thus the bleaching temperature at 6 per cent consistency was maintained at 35 deg. C., 11 per cent at 28 deg. C., and 17 per cent at 21 deg. C.

TABLE 29

Consistency	6%	11%	17%
3.78 per cent Cl_2 No.			
Mullen	75	73	70
Tear	192	192	193
Total strength	76	76	75
Alpha cellulose	87.83%	87.00%	86.46%
4.40 per cent Cl_2 No.			
Mullen	87	83	77
Tear	173	172	167
Total strength	74	73	70
Alpha cellulose	85.46%	86.22%	85.12%

Tests carried out on commercial pulp bleached at 9.5 per cent and 12.2 per cent consistency at a compensating lower temperature for the higher consistency showed an alpha content of 88.1 per cent for the low consistency and 87.5 per cent for the high. Reference may also be made to examinations of sulphite pulps bleached at high and low consistency in the second stage, the first stage being carried out at high consistency in both cases. The low consistency bleaching yielded a pulp testing 88.9 per cent alpha and the high consistency 87.5 per cent. These results tend to indicate that bleaching at high consistency whether in one stage or in the second stage of a two stage bleaching system, has a detrimental effect on the chemical purity of the pulp as measured by the alpha cellulose tests. The importance of this property in pulp intended for paper might be questioned but there can be little doubt that it may be safely concluded that there is a very distinct relation between the alpha cellulose content of a pulp fiber and its physical and hydration properties. Recent investigations have also shown that the content of the alpha constituents in a sheet of paper has a very important influence on its permanence.[39]

From the above discussion it is clear that an accurate control of the bleaching operation is essential if it is desired to produce a bleached pulp of maximum strength properties and good color. The slightest excess of bleach lowers the total strength appreciably and for this reason it is necessary to know the amount of bleach required by the stock to give a satisfactory product. This figure, as has been demonstrated, is given at once by the chlorine number of the unbleached pulp and hence the value of this determination as a control factor of the pulp quality.

An instance of the usefulness of the strength values in relation to the bleach consumption and the quality of the pulp was brought to light in some tests on a sample of unbleached and bleached pulp which had been submitted for analysis. The results of these tests are given in Table 30, where they are compared with average values for another pulp of the same chlorine number.

TABLE 30

		Pulp sample Cl_2 No. 2.29%	Average at similar Cl_2 No.
Unbleached Tests:—			
Unbeaten:	Mullen	88	75
	Tear	173	190
	Total strength	75	76
Beaten:	Mullen	100	110
	Tear	139	148
	Freeness	32.2%	43.6%
Bleached Tests:—			
Unbeaten:	Mullen	101	106
	Tear	121	142
	Total strength	63	72
Beaten:	Mullen	93	99
	Tear	101	120
	Freeness	22.4%	31.0%
Alpha cellulose		84.3%	86.0%

Judging from the total strength before and after bleaching and also taking into account the high color and relatively low alpha cellulose it was concluded that the pulp had been overbleached to a large extent. The big drop in strength after bleaching indicated that a ratio of bleach consumption to chlorine number of at least 8:1 had been used, or, in other words, that the pulp had been bleached with about 18.5 per cent bleach. When the sample was received for testing it was claimed to have been

[39] R. Rasch, P. T. J., Feb. 21, 1929.

TABLE 31

EFFECT OF PROCESSING ON STRENGTH PROPERTIES OF PULP

	Raw Stock—Pulp Mill			Raw Stock—Paper Mill			Beaten Stock				Refined Stock			
Number	Mullen	Tear	Total Strength	Mullen	Tear	Total Strength	Mullen	Tear	Total Strength	Freeness	Mullen	Tear	Total Strength	Freeness
1	109	140	71	121	160	80	103	168	78	55.0	111	159	77	38.6
2	112	138	71	111	149	74	105	153	74	52.2	110	150	74	38.7
4	104	131	67	112	142	73	100	154	73	65.5	111	130	69	42.4
4	112	163	78	116	153	77	97	162	74	53.5	107	146	72	45.6
5	112	137	71	109	160	77	107	158	76	54.6	115	145	74	41.7
6	104	146	71	116	150	76	107	151	74	51.8	115	144	74	43.7
7	104	148	72	108	152	74	100	163	75	55.0	111	152	75	36.6
8	107	136	70	115	153	77	99	151	74	53.6	109	152	75	38.4
9	100	134	67	105	138	69	102	136	68	50.9	108	127	67	39.0
10	100	132	65	109	146	73	97	153	74	50.0	103	140	70	38.4
11	104	148	72	116	160	79	107	164	77	54.3	115	156	77	40.5
12	110	135	70	103	154	73	98	162	74	53.0	104	158	75	42.1
13	110	145	73	97	158	73	98	179	79	53.0	102	149	72	37.6
14	101	147	71	100	142	69	94	170	75	51.4	105	145	71	40.3
Average	106	141	71	110	151	75	101	159	74		109	145	73	

bleached with 10 per cent bleach, but on receiving the above results this figure was checked and actually found to be 18 per cent, thus confirming our conclusions exactly. Instances such as this bring out the wide range of usefulness of the methods used for controlling the quality of the pulp.

Effect of Paper Mill Processing on Strength of Stock

Our bleached sulphite pulp is pumped in slush form, through a wood-stave pipe-line one mile in length, direct to the paper mill where it is utilized at once for the manufacture of paper. After the addition of size and alum and a small amount of broke, followed by a thorough mixing in the beaters, the stock is refined in claflans and jordans and then run onto the paper machine wire. Table 31 gives the results of a number of tests covering the changes in the strength properties of the stock from the time it leaves the pulp mill until it reaches the flow-box of the paper machine. Samples of stock were collected at the pump as it left the pulp mill, at the beater stock chest before entering the beaters in the paper mill, at the beaters immediately before dumping, and after refining. The above results, being those of acutal conditions over a period of two weeks, should be fairly conclusive as regards the progressive changes in the stock during processing. The effect of the addition of sizing agents and broke on the strength of the pulp is brought out in Tables 32 and 33.

TABLE 32
EFFECT OF SIZING ON STRENGTH OF PULP

% Size	% Alum	Mullen	Tear	Total Strength
—	—	107	162	77
2	3	107	186	84
4	6	103	182	81
6	9	97	185	81
8	12	94	185	80

TABLE 33
EFFECT OF BROKE AN STRENGTH OF PULP

% Stock	% Broke	Mullen	Tear	Total Strength
100	—	91	171	75
90	10	98	162	74
80	20	101	166	76
70	30	101	151	72
60	40	102	158	74
—	100	111	154	76

As Table 31 shows there is a decided increase in total strength during the time the stock leaves the pulp mill until it reaches the beaters in the paper mill, both the mullen and tear increasing. The stock entering the beaters contains a small amount of broke from the couch-pit of the paper machine. From Table 33 it is clear that the addition of broke increases the mullen and decreases the tear, leaving the total strength practically constant. The presence of this broke in the stock entering the beaters, together with the fact that some hydration undoubtedly occurs in pumping the stock from the pulp mill to the paper mill, might account for the increase in mullen during this period. It is more difficult, however, to account for the increase in tear; this property, in fact, usualy decreases as the mullen increases. The small amounts of size and alum present in the broke from the couch-pit might be a factor in this connection, since the addition of sizing materials increases the tear to a certain extent as shown in Table 32. The small quantity of these materials present, however, could hardly be responsible for the total increase in tear which takes place.

Judging from the changes in strength properties before and after beating, the effect of the sizing agent seems to be greater than that of the small percentage of broke added; it is also larger than the expected effect of beating. During this period in the processing operation, the mullen decreases while the tear increases slightly, which is similar to the effect produced by sizing. The addition of broke has the opposite effect, causing an increase in mullen and a decrease in tear, which is also the usual result of the beating action. In this case, however, the beaters are used mainly for mixing the stock with the sizing materials and broke and not for the usual beating action. This is shown clearly by the freeness values given in Table 31, which are not much lower than the average value of 60.0 per cent for the unbeaten stock. The changes during refining are what might be expected. The hydration and cutting of the fibres which occurs at this stage result in an increase in mullen and decrease in tear, the total strength undergoing no appreciable change. The freeness after refining is considerably lower than before showing the greater hydration and cutting, of the fibers which occurs at this stage.

Table 34 shows in a concise form the general conclusions that may be drawn as to the effect of the various processes on the strength properties of the pulp under normal operating conditions. By the time the stock is ready to be run on the paper machine it has increased slightly in both mullen and tear with a consequent increase in total strength.

TABLE 34
SUMMARY OF EFFECT OF PROCESSING ON PULP STRENGTH

	Mullen	Tear	Total Strength
Unbleached stock	72	173	70
Bleached stock at pulp mill	106	141	71
Bleached stock at paper mill	110	151	75
After sizing and beating	101	159	74
After refining	109	145	73

Relation Between Pulp Strength and Paper Strength

In an effort to bring out the connection between the strength properties of bleached sulphite pulp and the strength of the paper produced from it, the following four tables were compiled from our records of pulp and paper tests. Knowing the rate of flow of the stock from the time it leaves the pulp mill until it is wound on the reels as finished paper, it is a fairly simple matter to correlate the pulp tests with the tests on the same stock after it has been converted into paper. The figures given in Tables 35, 36 and 37 are the average values for the grades of paper shown, namely, 30 pound bond, 37 pound bond, and 20 pound waxing; no discrimination has been used in their selection from the records. These three tables bring out clearly the important effect of a high pulp mullen on the mullen test of the resulting paper. The influence of the tear and total strength is not so marked; pulps having the same tear of total strength may yield papers of varying bursting strength although of the same weight.

Almost invariably, however, a pulp with a high mullen produces a paper with a high mullen also, while paper with a low mullen results form pulp having a low mullen value, even though in the latter case the tear and total strength may be above the average.

This fact shows the value of the initial strength test in controlling the quality of the paper. If the mullen test of the pulp

TABLE 35
RELATION BETWEEN PAPER TESTS AND PULP TESTS
30 lb. Bond

Effect of Low Pulp Strength				Effect of High Pulp Strength			
	Pulp Tests				Pulp Tests		
Paper Mullen	Mullen	Tear	Total Strength	Paper Mullen	Mullen	Tear	Total Strength
16	90	158	71	19.5	104	155	74
14				19			
16	89	171	74	20.5	101	164	76
16				21.5			
15	88	157	70	20	106	162	77
15				21			
15	84	138	63	20.5	104	147	72
15				21			
17	88	171	74	20	106	163	77
17				22			
18	87	171	74	20.5	106	156	75
16				21.5			
17				22	100	163	75
18	89	136	64	21.5			
15				19	103	157	74
16				20.5			
16	86	154	69	18	96	154	71
14				20			
17				18.5			
15	84	151	67	17.5	91	163	73
17				19.5			
14				18			
14	84	170	73	19	92	168	74
14				18			
16				19			
15	89	170	74	19.5	101	153	73
14				17			
12	92	166	74	17	109	163	78
12				21			
14				21	95	169	75
17	93	154	71	19			
15				22	97	163	74
17	90	157	71	19			
15				19	93	165	74
16				19			
16	92	154	70	20	100	168	77
15.5				19			
15.5	94	141	67	20	100	159	74
Average 15.5	88.7	157.4	70.4	19.7	100	160.7	74.6

TABLE 36
RELATION BETWEEN PAPER TESTS AND PULP TESTS
37 lb. Bond

Effect of Low Pulp Strength				Effect of High Pulp Strength			
	Pulp Tests				Pulp Tests		
Paper Mullen	Mullen	Tear	Total Strength	Paper Mullen	Mullen	Tear	Total Strength
18	92	154	70	25	99	142	69
18				29			
18	87	132	63	28	99	150	71
19				27			
19	87	152	68	27	102	159	75
18				29			
19	86	164	72	30	112	156	77
18				28			
18	93	170	75	31	101	167	77
18				31			
19.75	96	153	71	31	98	172	77
18.25				29			
18.5	91	163	73	27	97	153	72
22				26			
18.75	89	169	74	26	100	173	78
22.25				29			
22	86	173	74	30	104	171	79
25				30			
21	88	180	77	30.5	103	167	77
20				27.5			
22	95	168	75	27.5	101	163	75
21				27			
20	90	166	73	25	96	158	73
20				25			
22	93	168	75	27	96	174	76
19				27			
18				29	103	157	74
21	92	152	70	28			
20				29	96	154	71
21				26.5			
18	88	148	67	27	94	147	69
18				25.5			
17				26.5	96	159	73
20	93	157	71	25			
21				27	96	165	75
19				25			
17				29.5	92	180	78
18	97	152	71				
Average 19.6	90.8	160	71.7	27.8	99.2	161.4	74.5

is sufficiently high, little beating action is required in order to obtain a strong paper. On the other hand a low bursting strength indicates the need of more or less beating to increase the mullen to a point which will yield paper of the desired strength. The relation of the initial strength properties to the effects obtained on beating have been referred to earlier in this paper.

The progressive effect of a change in pulp strength on the mullen value of four different grades of paper is demonstrated in Table 38. The values given here represent continuous runs in each instance. From these figures there can be no doubt that the bursting strength of the pulp has a definite influence on the paper mullen, any change in the former causing a corresponding change in the latter. The changes in tear and total strength of the pulp bear a somewhat similar relationship to the paper mullen although their effect is not so pronounced and regular as that of the mullen.

TABLE 37
RELATION BETWEEN PAPER TESTS AND PULP TESTS
20 lb. Waxing

Effect of Low Pulp Strength				Effect of High Pulp Strength			
	Pulp Tests				Pulp Tests		
Paper Mullen	Mullen	Tear	Total Strength	Paper Mullen	Mullen	Tear	Total Strength
10	97	148	70	15	95	155	71
12.5				14			
11	95	144	68	14	97	154	72
11.75				13			
10	91	133	64	12	101	162	75
10.5				14			
10.25	88	145	67	13	104	167	77
11				14			
10.5	90	159	71	15	108	169	79
10.75				15			
10.5	89	168	73	16	106	166	78
10.5				15			
11.75	90	183	78	15	109	162	77
10.5				15			
12.75	90	163	72	14	106	159	76
10.75				15			
11.25	83	150	67	15	106	171	79
11				13			
11	81	143	64	14	108	146	73
11				15			
11	88	152	69	15	108	146	73
12				17.5			
9.5	91	154	70	17	113	148	75
9				17			
9	89	142	66	17	106	149	73
8.25				17			
9.25	89	137	65	16	113	168	80
8.5				16			
10.5	86	153	68	17	102	169	77
10				17			
10	86	138	64	16	111	178	83
11				17			
10	86	143	65	17	110	183	84
10.75				16			
10.75	89	171	74	14	104	179	81
9.5				17			
10.25	87	152	68	17	98	177	81
Average 10.5	88.7	151	68.6	15.3	105.5	163.5	77

Summary

TABLE 38
PROGRESSIVE EFFECT OF PULP STRENGTH ON PAPER TESTS

	Pulp Tests		
	Paper Mullen	Mullen	Tear	Total Strength
30 lb. Bond	19	96	169	76
	18			
	17.5	96	149	70
	16.5			
	15	93	168	75
	15.5			
	17.5	90	155	69
	18.5			
	18	94	169	75
	19			
	20	98	168	76
37 lb. Bond	19	89	148	68
	22			
	22	90	150	69
	21			
	25	91	165	73
	24			
	25	95	161	73
	26			
	26	93	188	80
46¼ lb. Bond	28	90	167	73
	27			
	24	88	160	71
	25			
	27	89	152	69
	26			
	26	89	147	67
	25			
	28	82	142	64
	29			
	27	90	139	65
	32			
	34	98	161	74
	32			
	30	99	158	73
55 lb. Bond	40	92	168	74
	38			
	37.5	98	168	76
	38			
	34.25	89	172	75
	34.75			
	32	82	149	66
	33.5			
	33	84	157	69

The main object of this paper has been to stress the importance of technical control in the pulp industry, and to show its value in determining and regulating the quality of the product obtained. The two outstanding methods in use here, namely, the Roe chlorine number of ascertaining the purity of the fibers and the initial strength test for determining the strength properties of the pulp, have been discussed in detail and their application to mill conditions made clear.

The Roe chlorine number determination has been compared with other methods and shown to be much simpler and more rapid in operation, while still maintaining a high degree of accuracy. Its value as an indication of the lignin content of pulps has been demonstrated conclusively; in fact, it has been found possible, within limitations, to use this test for determining the percentage groundwood in a sulphite-groundwood mixture. Its direct relationship to the bleach consumption required by pulp has been brought out and confirmed by a series of investigations on bleaching which have been fully described.

The procedure for the initial strength test has been described and its relation to the chlorine number pointed out. The effect of the cooking procedure on these two characteristics of the pulp has been discussed briefly, after which their relation to the various conditions of bleaching has been gone into in some detail. The detrimental effect of excess bleach on the strength and chemical purity of pulp has been emphasized, and the value of the chlorine number in this connection noted. The changes in the strength properties of pulp produced by variation in consistency and by two stage bleaching have also been indicated.

The variation in pulp strength during paper mill processing and the relation between pulp strength and paper strength has been demonstrated, emphasis being laid on the important influence of a high pulp mullen on the strength of the resulting paper.

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Clarence J. West, Chairman

Mechanical Processes

Manufacture of Groundwood Pulp. C. O. Bachman. Paper mill 51, No. 34, 20 (Aug. 25, 1928). Investigation into the reason why groundwood prepared from the same wood under apparently the same conditions and having the same freeness test exhibits wide variations in Mullen and Elmendorf test values has shown that the formation and structure of the individual fibers has a direct bearing on the strength of the finished paper particularly when made on high speed machines. Microscopical examination of ground wood paper having a high Mullen test showed the fibers to be curved and barbed, while in low strength papers the fibers are smooth and straight.—A.P.-C.

Pulp Grinder Control Reduces Paper Costs. Adolph F. Meyer. Paper Trade J. 87, No. 9, 49-52 (Aug. 30, 1928). A description of the Meyer load regulator for waterwheel driven or motor driven pulp grinders and of the Meyer master regulator for maintaining constant and total system load, with a discussion of their advantages.—A.P.-C.

Strength of Pulpstones. G. M. Johansson. Svensk Pappers-Tid. No. 13, 469-72 (1928). Calculations and discussion of stress and strains in pulpstones under various conditions of operation. Further research is needed on physical and chemical composition of the stones and compression and tensile strengths on stones (a) fresh from the quarries, (b) after one and two years' storage in both wet and dry condition.—C. E. P.

Sulphite Process

Production of Sulphur Dioxide by Burning Sulphur. C. E. Liden. Svensk Pappers-Tid. No. 6, 173-7 (1928). The proper construction of a sulphur burner requires knowledge of the chemical and physical properties of SO_2 and also of the thermodynamics of the equations, $S + O_2 = SO_2$ and $2SO_2 + O_2 = 2SO_3$. The effect of temperature on SO_3 formation is as follows:

Degrees C	900	800	700	600	500	400	300	250	200
% S to SO_3	4	12	20	32	36	40	28	20	0

Figures show relation of excess air and temperature to SO_2 content of gases.—C.E.P.

Instrument Control for Sulphite Pulp Mills. Reginald Trautschold. Paper Trade J. 87, No. 2, 44-48 (July 12, 1928). A discussion of the necessity and advantages automatic indicating and recording instruments for controlling and regulating the operation of sulphur burners, gas coolers, acid towers, digesters, and pulp preparing equipment.—A.P.-C.

Developments in the Preparation of Calcium and Magnesium Bisulphite liquors. D. W. Stewart. Pulp Paper Mag. Can. 2b, 1013-1016 (July 26, 1928). A review is given of the relative advantages of calcium and magnesium bisulphite liquors, as found in the literature. A study of the adaptability of magnesite to present-day methods of manufacturing sulphite acid showed that dolomite is about 13 times as soluble in sulphurous acid solution as magnesite, and limestone about 9 times as soluble as dolomite; hence, substitution of dolomite and magnesite for limestone in acid towers would require greatly increased tower capacity. Moreover, when any two of the minerals are present in disseminated form, considerable sludge is formed on account of the different rates of solution, which would tend to choke the towers. By moderate calcination of magnesite (which decomposes at a considerably lower temperature than dolomite) the rate of solution is increased above that of dolomite; so that with a rock containing both minerals calcination would not eliminate formation of sludge. The technical advantages of the tower system of liquor manufacture can be obtained both by adding crushed calcined dolomite or magnesite to the water fed at the top of the ordinary limestone towers. Laboratory experiments have shown this procedure (patents applied for) to be quite practical and to give satisfactory results. The advantages of the process are: the amount of magnesia in the liquor is easily regulated as required, the process can be adapted to existing tower systems at a slight cost, it possesses the advantages of the milk of lime acid making systems without its drawbacks, variations in temperature between summer and winter can be partly compensated for by regulating the addition of calcine, loss of sulphur dioxide in the gases exhausted from the towers will be materially reduced, and 40 pounds of calcined magnesite will replace 100 pounds of limestone.—A.P.-C.

Process for Ensuring Proper Circulation and Uniform Temperature in Sulphite Digesters. W. R. Hovey. Fr. pat. 637,326. Liquor is withdrawn from the digester near the top and reintroduced through nozzles distributed around the middle or upper portion of the bottom conical part of the digesters. The circulation thus effected results in a very uniform cooking of the lignocellulosic material and gives a very homogeneous pulp. It is claimed that a higher yield of better pulp can be obtained in a shorter time or at a lower temperature than by cooking in the usual way. Moreover, by slightly undercooking the chips a high yield of very strong pulp, suitable for the manufacture of imitation kraft or glassine papers, is obtained.—A.P.-C.

Heat Recovery System for Sulphite Mills. A. F. Richter and F. A. Augsbury assignors to Stebbins Engineering & Manufacturing Co. U. S. pat. 1,653,416, Dec. 20, 1927; Paper Trade J. 87, No. 8, 49-50 (Aug. 23, 1928). The relief gases and liquor and the spent liquor are collected under pressure in one or more acid accumulators. The low pressure relief gas is admitted to the top of the accumulator, where it is absorbed by a spray of cold acid from the acid storage tanks. The high pressure relief gas is admitted at the bottom of the accumulator and is absorbed as it bubbles up through the acid, provision being made for admitting part of the high pressure relief gas at the top of the accumulator when the pressure therein falls too low. The acid from the accumulator is either pumped or forced by steam pressure into the digesters. When two or more accumulators are used, they are provided with pressure or thermostatic controls, so that the relief gases from the digesters and liquor from the acid storage tanks are automatically changed from one accumulator to the other.—A.P.-C.

Stebbins Acid Accumulator System for Sulphite Mills. T. L. Dunbar assignor to Stebbins Engineering & Manufacturing Co. U. S. pat. 1,646,084, Oct. 18, 1927; Paper Trade J. 87, No. 8, 47-48 (Aug. 23, 1928). About 50 per cent of the spent liquor is mixed with fresh cooking liquor, while the remainder is mixed with an alkaline solution and used for the preparation of sulphite cooking liquor. The mixed spent and fresh sulphite liquors are preheated and sent to surge tanks (one above each digester), connected to both the top and bottom of the digesters, from which the liquor flows by gravity into the digesters. After the digester has been brought up to normal cooking pressure, the steam is practically cut off, and the liquor is circulated by means of a pump through the digester and corresponding surge tank. At any desired stage fresh hot liquor under pressure can be pumped into the digester to increase the pressure but not the temperature, thus

obtaining the benefits of high pressure, without the drawbacks of high temperature. The piping is so connected that the liquor can be circulated as desired either through the several digesters or surge tanks or back into the hot liquor tank and storage tanks.—A.P.-C.

Steam Consumption in Digesters. Anon. Paper Trade J. 87, No. 5, 54-56 (Aug. 2, 1928). Examples are given of the method of calculating the steam consumption for cooking in both lagged and unlagged digesters, so as to obtain and compare their thermal efficiencies; and it is shown that even in the case of rag boilers a considerable saving can be effected by lagging.—A.P.-C.

Tanning Products Obtained as Bi-Products in the Manufacture of Wood Cellulose. Rene Escourrou. Chimie et Indus. Special No. 623-633 (Apr., 1926); Papier 31, 385-390 (Apr.), 499-510 (May, 1928). A review.—A.P.-C.

A Mill Scale Demonstration of Temperature Control in Sulphite Pulping. G. H. Chidester. Paper Trade J. 87, No. 15, 64-66 (Oct. 11, 1928). The importance and advantages of following definite temperature schedules in cooking sulphite pulp to obtain optimum yield and quality having been shown by the laboratory experiments of Miller and his coworkers, the results obtained were applied to the production of sulphite from spruce and hemlock in an 80-ton mill. It was found that by following a definite predetermined temperature schedule the amount of screenings was reduced by about 50 per cent, the time required to run the stock out of the blowpits was increased by about 15 to 30 minutes, the yield was increased about 5 per cent without additional cost of raw material or labor, the strength was increased, the bleach requirement was reduced, and both the strength and bleach requirement were made uniform. These results were obtained with an increase of only 1 hour in cooking time (from 8.5 to 9.5 hours).—A.P.-C.

Semi-Sulphite Process. C. C. Heritage, C. E. Curran, W. H. Monsson and G. H. Chidester. Paper Mill 51, No. 40, 9, 12 (Oct. 6, 1928); Paper Ind. 10, 1197-1199 (Oct., 1928). The semi-sulphite process consists of a mild pulping action using the usual constituents of sulphite cooking liquor, but so regulating the conditions of temperature, time, concentration, and ratio of acid to chips that the chips, although thoroughly impregnated, are only softened and thus retain their original form, at the end of the reaction, to a large extent. The softened chips are "blown" from the digester as usual, are thoroughly washed, preferably with warm water, and are then mechanically disintegrated to a true pulp by suitable equipment. For this purpose the rod mill has been found satisfactory, although other types of refining equipment can possibly be used as well. From the results of tests carried out with such pulp, it is concluded that: (1) It appears to offer a means by which a high yield of pulp suitable for news print and other grades of coarse paper can certainly be obtained from spruce and hemlock, and possibly from hardwoods and mixtures, and perhaps from some of the more resinous species such as jack pine. (2) The yields obtained can be varied at will from 25 to 50 per cent in excess of present mill practice. (3) A considerable saving can be effected in the time required for cooking. (4) A maximum bursting strength of a point per pound per ream or more can be obtained from the pulp. (5) Screenings can be eliminated, since the total digester charge is utilized. (6) Approximate cost estimates indicate an ample margin of saving over the additional power and fixed charges incurred by rod milling. (7) Difficulty in discharging the digester by its own internal pressure would probably develop at yields above 60 to 65 per cent. The recent trend in mill construction toward the employment of gravity discharge after complete release of pressure appears to meet such a difficulty.—A.P.-C.

Sulphite Cellulose from Spruce. Ragner Bergquist. Svensk Pappers Tid. 5, 138-40; 6, 171-3 (1928). After reviewing the work and theories of the chemistry of sulphite cooking as set forth by Hägglund, Miller and Swanson, and Soderquist, Birchard, Schwalbe and Escourou, and Carpenter, the author attempts to reconcile the various viewpoints and to bind them into one common theory, as follows: Cooking by the sulphite process proceeds in three stages. (I) The liquor is acid. During this period of impregnation of the chips with the cooking liquor it is necessary to bring the digester up to 110 degrees C. slowly enough so that the diffusion keeps in step with the sulphite addition to the lignin bodies. During the temperature rise period it is important to have a relatively high SO_2 content to increase the speed of the diffusion. (II) The cooking liquor is alkaline, and due to the presence of (OH) ions alkaline hydrolysis takes place. The addition products between the aldehydes and one of the acid radicals attached to the S is very conceivably insoluble in the liquor, but at the increasing temperatures rearrangements take place whereby easily soluble, true sulphonic acids are formed. (III) Third period begins when the replaceable Ca is consumed. The liquor then reverts to an acid condition, although very slowly at first, due to the liberation of organic acids. Later the acidity increases so rapidly that care must be used in not allowing carbonizing of the sugars or polymerization of the liquors to take place. Uniform pulps require (1) sufficiently long impregnation period, (2) selenium-free sulphur, (3) an SO_2 content of less than 0.06 per cent in the cooking acid.—C.E.P.

Effect of Temperature on Sulphite Cooking. Erik Hägglund. Pappers Och Travarutids, for Finland No. 12 (1928); Papier 31, 717-725 (July 1928). Other cooking conditions being equal, a yield of 55 per cent of pulp containing 7 to 8 per cent lignin can be obtained with maximum cooking temperature of 120 to 135 degrees C. When the maximum cooking temperature is carried to 135 degrees C., delignification occurs so rapidly that it is difficult to stop the cook at exactly the proper moment, while this can be easily done with a maximum temperature of 120 degrees C., which constitutes the advantage of low-temperature cooking. In the stages where the pulp has a bromine number of 0.15 to 0.30 (yields of 52 to 48 per cent), it makes no difference whether the maximum temperature is 120 or 135 degrees C., the pulp yields and their bromine numbers being the same and the pulps having practically the same strength when beaten to the same degree in both cases. With rapid cooking (maximum temperature of 145 degrees C.), however, conditions are different, the pulp being of lower quality and the yield for the same degree of delignification about 3 per cent lower quality and the yield for the same degree of delignification about 3 per cent lower. The rate of delignification is approximately doubled by increasing the cooking temperature 10 degrees C. Temperature was found to have relatively little influence on the acidity, sugar content of the liquor and production of sulphuric acid.—A.P.-C.

Automatic Device for the Recovery of Condensed Steam in Pulp Mills Cooking by the Indirect Process. Sainte-Martine. Chim. et Indus. Spec. No., 619-622 (Apr. 1928). Apparatus at present in use to protect the boilers in case the condensate should be contaminated with liquor has been perfected by providing that the valves are operated by small servo-motors instead of electromagnets, that the contaminated condensate is directly discarded while the pure condensate is sent to the boilers, the discarded and utilized condensate are metered separately, and in case of accident to the mechanism the whole of the condensate is sent to waste.—A.P.-C.

Sulphite Waste Liquors

Binding Materials for Agglomerating Finely-Divided Fuels or other Pulverulent Matter. Briquetting Finely Divided Coal Fuel, or other Pulverulent Materials. O. Reynard and F. F. Tapping. Eng. pats. 293,135 and 293,136, Apr. 4, 1927. No. 293,135. A binding agent is made by neutralizing concentrated sulphite waste liquor with alkali, adding carbonaceous material to form a paste or, alternately, emulsifying with a petroleum or tar oil, and incorporating the product with molten bituminous material at a temperature above 100 degrees C., and under pressure. No. 293,136. The finely divided material is mixed with 3 to 6 per cent of a bituminous binder, preferably one melting at or above 120 degrees C., and with 1 to 4 per cent of a water-in-oil emulsion. The latter

may contain 1 part of fuel oil and 1 to 6 parts of an aqueous solution of a suitable emulsifying agent, such as soda ash, sodium caseinate, sulphate waste liquor, etc.—A.P.-C.

Tanning Materials from the Manufacture of Pulp. Rene Escourrou. Cuir Techn. 17, 155-166 (1928). Extracts obtained as by-products from the manufacture of sulphite pulp are of value only when used in conjunction with other tannins. Liquid extracts are preferable; the acidity, pH value, tannin and non-tannin contents ought to be such that when blended the other tanning materials the resulting liquors will have the desired properties. Analytical figures are given.—A.P.-C.

Lignin Extract Makes Cheap Organic Binder. R. M. King. Ceram, Ind. 11, 1, 43-45 (1928). Frequently a need arises for a cheap organic binder for increasing the dry strength of ware. For many years lignin extract has been used to increase the strength of foundry cores. Isolated experiments have shown that it holds considerable promise for the ceramic industries. The dry strength of bodies can be increased 100 per cent by the use of 0.5 per cent lignin extract.—C.J.W.

Alkaline Processes

Instrument Control for Soda and Sulphate Pulp Mills. Reginald Trautschold. Paper Trade J. 87, No. 8, 38-42 (Aug. 23, 1928). A cursory review of the steps entailed in soda pulp production and their effective coordination into one continuous and repetitive process, pointing out the strategic utilization of instrument control.—A.P.-C.

Improved Pulping Process. S. Milne. Fr. pat 635,307. By subjecting the contents of the digester to certain electric influence during the cooking, the reactions are intensified with the following results: reduction in time required for cooking (up to 50 per cent), reduction in chemicals (up to 35 per cent in the case of caustic soda), more complete removal of non-cellulosic constituents, suppression of certain secondary reactions, certain chemicals which are usually considered of little or no value for pulping become quite active (e. g., neutral sulphites). The electric influences found most favorable were those due to oscillations in electric currents. The oscillating currents applied may be either such as are produced by so-called disrupting discharges or by thermionic lamps (such as are used in radiotelegraphy), and they may be regulated, modified or influenced by such devices as condensers, transformers and inductances. Good results have also been obtained by the application of: (a) continuous low-voltage direct currents; (2) intermittent, low-voltage direct currents; (c) low-voltage direct currents of variable potential.—A.P.-C.

Alkaline Pulping Process. Société Française des Sucrateries. Fr. pat. 638,536. The material is cooked with a barium hydroxide solution instead of caustic soda or potash.—A.P.-C.

Recovery of Alkali from Black Liquor. A. R. DeVains. Fr. pat. 614,249, Sept. 16, 1926. The organic matter in the liquor is precipitated by treating with an alkaline-earth bisulphite, preferably calcium bisulphite, and filtered off, leaving the alkali in solution. By using four molecules of calcium bisulphite per molecule of organic soda compound, the alkali is obtained in the form of sodium bisulphite.—A.P.-C.

Wagner Furnace. C. L. Wagner. Paper Mill 51, No. 26, 16, 39 (Sept. 30, 1928). A description of the furnace and its operation.—A. P.-C.

Sulphate Process Patent Review. Joseph Roseman. Paper Trade J. 87, No. 6, 57-59 (Aug. 9, 1928). A review of American patents.—A.P.-C.

Semi-Continuous Pulping Process. Bird & Co. and E. Spencer. Eng. pat. 291,065. In a semi-continuous progressive process for the preparation of cellulose or paper pulp from bamboo, grasses, wood or reeds, by digestion under a gradually increasing pressure and digesting liquor concentration, the liquor concentration in the last stage or the composition of the liquor, and if desired the pressure also in the final stage or stages, is reduced or modified so as to reduce the severity of its action and thereby avoid hydrolysis of the fiber. The greatest strength of the digesting liquor is arranged at an earlier stage and preferably at a lower pressure. Mixed digesting liquors are used, e.g., caustic, sulphides and/or sulphites, the proportions being adjusted to obtain a greater amount of sulphites, which reduce the tendency towards hydrolysis in the latter stages. The process is particularly applicable to the processes described in Eng. pats. 283,910 and 291,064.—A.P.-C.

Preparation of Cellulose from Agricultural By-Products. Umberto Pomilio. Pulp Paper Mag. Can. 26, 1293-1296, 1324 (Sept. 20, 1928). An address discussing the advantages and possibilities of the chlorine gas process for the production of pulp from cereal straws and similar agricultural waste products.—A.P.-C.

Story of Sulphate Pulp Manufacture. L. J. Dorenfeldt. Paper Ind. 10, 809-813 (Aug. 1928). Extracts from the private papers of C. F. Dahl, original inventor of the sulphate process.—A.P.-C.

Method of Analysis for Black Liquor and Sulphite Cooking Liquors. E. Oeman. Tekn. Tidskr. Kemi. 57,51 (1927). For NaOH, 25 cc. liquor are diluted to 250 cc. with 95 per cent C_2H_5OH and the mixture allowed to settle to complete clarification (2 to 3 hours), 25 cc. of the alcoholic solution is titrated with 0.1 N HCl, using Nile Blue (sulphate) as indicator. The purity of the alcohol and the time of settling must be followed unconditionally. Other alcohols gave negative results. The usual method of precipitating with $BaCl_2$ is not accurate because of the large amount of NaOH absorbed by the precipitate. The method determines NaOH + ½ Na_2S and about 10 per cent of the Na_2CO_3, if present. For Na_2S, 25 cc. of the alcoholic solution is added to 300 cc. of water containing about 5 cc. 2 N acid, and titrated with iodine. For total sulphur, 25 cc. black liquor is heated with an equal volume of red, fuming HNO_3 in a distillation flask, and the gases condensed. Heating is continued until the liquor becomes clear. The distillate is added to the liquor and S determined by $BaCl_2$. To show the presence of polysulphides in white liquor, Oeman agitated the liquor with an excess of 95 per cent C_2H_5OH in a separatory funnel and obtained a yellow oil which was soluble in water and yielded H_2S and free S on acidification. The polysulphides may be estimated by filtering, washing, and drying the precipitated S. When white liquor and black liquor are mixed a chemical reaction takes place between the organic material in the black liquor and the free alkali in the white liquor. The free alkali concentration decreases considerably, decreasing the severity of the chemical action of the fiber. During cooking more organic material is brought into solution, further decreasing the alkaline concentration. Reversible, lightly bound NaOH is liberated, aiding the digestion. The organic material also acts as a buffer for the free alkali. The relative proportions of combined and free alkali vary with the temperature. The organic material reacts also with Na_2S, the reaction being dependent on the time and the concentration of NaOH in the black liquor.—C.E.P.

Circulation in Beaters

SPECIAL INQUIRY No. 122

A member writes: "During the past few years several companies have introduced high speed beaters for which they have claimed larger capacities on the same power or less power per ton of stock treated. Have you any information as to whether the beating action is accelerated or if the results obtained are rather of an increased capacity in mixing than in beating?

"Some authorities hold that the drawing out of the fibers is due to the action of the roll and bedplate on the fibers passing between them and that where velocity is increased the beating effect is decreased. In other words, the degree of beating is proportional to the time the stock is acted upon by the roll and bedplate and the speed of the stock is of less importance."

Replies to this inquiry should be based on actual tests rather than on opinions and should contain test data.

A complete transcript in blank of the replies received will be sent to contributors of information. Send replies to Secretary of TAPPI, 18 E. 41st street, New York, N. Y.

Section of the

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Assessing the Factory *

By Philip Nichols[1]

There arises in the case of every plant that has been in actual operation, even for a short period, the difficult problem of determining how much the present day cost of replacing the plant new should be diminished by loss of value due to use or the lapse of time.

The deductions from replacement cost due to such causes are usually classified as depreciation, obsolescence and inadequacy.

Deduction (A) Depreciation

Depreciation, though the term is sometimes loosely used to cover all three deductions, is usually limited in its meaning to diminution in value due to wear and tear. If it can be seen that buildings and machinery are physically worn out and defective, incapable of repair without disproportionate expense and not available to be used with reasonable efficiency for the purpose for which they were intended, the value to be assigned to them can be stated in figures based on individual judgment. In many instances, however, especially in the case of machinery, an individual unit may be performing its work as efficiently as if it were new; and yet it is known that machines of the type to which it belongs do not last forever, even with the best of care. Obviously a machine with but ten years of useful life before it, is less valuable than one which may be expected to operate efficiently for twenty years; the difficulty is in finding some measure of the shrinkage in value due to invisible wear and tear.

In determining net income, in connection with the income tax as well as for other accounting purposes, the "straight-line method" is commonly used for calculating the annual loss from physical depreciation. Machines of any given type have an ascertainable average life. If this life is 25 years, a deduction of four per cent from the original cost each year will furnish a depreciation reserve sufficient to meet the expense of replacement, if costs have remained stable, and a deduction for depreciation according to this method has the sanction of the federal income tax authorities and of most accountants.

Many valuation engineers attempt to apply this method, devised for calculating annual net income, to the determination of capital value at a given date, by deducting from replacement cost new the depreciation accrued up to the date as of which the valuation is to be made. Upon the same assumption of expected life, as in the former illustration, a machine fifteen years old would have depreciated 60 per cent; if its replacement cost new was a thousand dollars, its residual value at the end of fifteen years would be $400.

There are, however, some fallacies in applying to valuation a method used primarily to determine true net income. A method which ignores replacement of parts and extraordinary maintenance may in some cases depreciate to almost nothing those machines which have not only the efficiency but the expectancy of life of new units.

The experts who use straight-line depreciation slavishly, often also fall into a serious mathematical error. An average life of, for example, twenty-five years is not based on the assumption that all machines of a given type operate efficiently for that precise period and then simultaneously fall to pieces, like the famous "one hoss shay." The twenty-five years is but an average, and some of the machines, from accident, or from some latent weakness, exposure to unusually hard usage, abuse by careless or unskilful operatives, or other like cause may be worn out at the end of ten years, others may last thirty-five or forty years. If a factory started operations with 100 machines costing $1,000 each, with an average expected life of twenty-five years each, at the end of fifteen years perhaps ten of the machines have been worn out, scrapped, and replaced and are thus no longer to be included in the valuation of the original group. Even if the average depreciation of 4 per cent is correct and assuming replacement cost had not changed, it would be manifestly wrong to value the ninety remaining machines at but 40 per cent of their replacement value or $36,000, since the average figure is based on the expectancy of the whole group; and in the case supposed, the true residual value would be $40,000. Yet many valuation engineers have fallen into this fallacy.

Usually, to avoid the absurdity of allotting but nominal value to the remaining machines of the original group which are operating satisfactorily after a long and useful career, a minimum figure of 25 per cent of replacement cost is named, below which depreciation does not go; but this variation of the "straight-line" method does not prevent the undervaluation of machines which have served less than three-quarters of their normal life, when the units of the original group which have been discarded are disregarded.

Another method of computing depreciation is by the use of an asymptotic curve; that is, to use the same figures as in the previous example while 4 per cent is deducted the first year, leaving 96 per cent residual value, the next year 4 per cent of the residual value is deducted, instead of 4 per cent of the original value, and this method is continued, leaving a residual value steadily decreasing but never reaching zero, until the machine is actually scrapped.

While this method avoids some of the extreme under-valuation of efficient properties arising from the literal application of the straight-line method, neither method can be applied to large blocks of separate units unless the number of units in the original group that have already worn out is known.

* Industrial Realty Survey.
[1] Chairman, Massachusetts Taxpayers' Conference Committee.

Some authorities on depreciation believe that with a large plant containing many units of different ages which are constantly being replaced or renewed, a fixed stage of composite depreciation is reached after a few years of operation and is thereafter maintained, and the actual depreciation can be ascertained more accurately by determining the permanent composite depreciation based on the character of the machinery and the care used in its upkeep rather than by applying either the straight-line depreciation or the asymptotic curve to the individual machines. Those who adopt this method insist that a well maintained plant, where machinery is replaced or renewed with sufficient frequency, never falls below 50 per cent of its replacement value, and that with machinery requiring a high degree of accuracy, the composite depreciation of a well maintained plant will be much less; in cases of industries requiring tools of extreme precision it may, it is claimed, never amount to over 10 per cent.

Deduction: (B) Obsolescence

Obsolescence is the loss in value of buildings and machinery due to the discovery or introduction of better design or improved mechanism since the property in question was new. The introduction of the modern type of factory building, with wider bays, larger windows and other like improvements makes a factory building of the older type less valuable than if it had suffered only from physical wear and tear. Improvements in machinery, which are constantly being made, often make machines of an earlier type though still physically perfect, if not worthless, at least of less value than if they had remained of the most efficient known design.

Some valuation engineers attempt to justify an annual "straight-line" deduction on account of obsolescence, as well as for physical depreciation, on the assumption that improvements in design, even if they have not already occurred, are bound to come before a machine wears out. This assumption is, however, unwarranted and involves an obvious fallacy. If no improvements have in fact been made in the design and a machine ten or fifteen years old is identical with one just received from the factory, a rule which assigns obsolescence to the former and not to the latter is clearly unsound.

There are no cycles of invention in machines. There is no natural law which determines that machines will inevitably be superseded by improved design in a given number of years. Obsolescence cannot properly be deducted from the value of a machine until it can be shown that there is a better machine available.

If, however, improvements in design can be shown to have occurred, the impairment of the value of the older type of machine must be recognized. The futility of attempting to continue with the machines and methods of another era in competition with plants using the newest and most up-to-date equipment has been too emphatically demonstrated in recent years to allow obsolescence which can actually be demonstrated to be ignored in tax valuations.

When the improvement in design has not rendered the older type of machine useless and valueless, the amount of diminution in value can often be computed by capitalizing the savings to be derived from the new machine. It sometimes appears, however, that when the advantage of the new machine lies in economy of production rather than improvement in quality of product, the older machine at its depreciated value is relatively as inexpensive to operate as a newer, more efficient but more expensive machine, having regard to capital outlay as well as operating expense, and that "scrapping" the older machine would not be sound policy, and in such case there should be no deduction for obsolescence additional to that already taken for physical depreciation.

Deduction: (C) Inadequacy

Inadequacy is another condition sometimes operating to diminish the value of a plant. Although neither buildings nor machinery may be even partially obsolete and little physical depreciation may have taken place, it occasionally happens that through a change in manufacturing conditions the plant as a whole, or certain units in the plant, are of insufficient size to operate to the best advantage, and this condition of inadequacy must be considered in determining the true value of the property.

Limitations on Any Rule

After replacement cost new, with due allowance for depreciation, obsolescence and inadequacy, has been determined, the result may or may not indicate the market value of the plant. Except under very unusual circumstances, when there is an opportunity for a very large immediate profit to anyone who can get hold of a plant in operation or ready to operate immediately, such as occurred in many industries during the war, no purchaser would pay more for an existing plant than the cost of building one just like it; and if he was to buy a plant that had not been very recently built and equipped, the purchaser would naturally insist on an allowance for such depreciation, obsolescence and inadequacy as existed in the plant, so that replacement cost thus reduced is the maximum fair cash value of the plant. Even if the owners of the property were operating at a large profit and were unwilling to sell the property at a reasonable price the purchaser would still prefer to build a new plant than to pay more than the replacement cost.

Productive Value

It must, however, always be remembered that manufacturing properties are ordinarily acquired solely for the purpose of being operated at a profit, and that no manufacturing property is worth more than the capital sum upon which it can reasonably be expected to earn a fair return; and in the case of an enterprise requiring effort and skill in operation and involving some risk of disaster, a return of 8 per cent or possibly 10 per cent is required to invite investors. Accordingly, regardless of replacement costs, or intrinsic value if one wishes to so describe it, no manufacturing or other industrial plant has a market or taxable value in excess of 12½ (or possibly 10) times the net annual income which can reasonably be anticipated from operating it.

The application of this principle does not by any means involve the revaluation of each plant each year in accordance with its income of the previous year; nor does it mean that two identical or similar plants in the same neighborhood are to be valued differently because one, by reason of good fortune and good management, is operating at a profit and the other is operating at a loss. The actual income of a given plant may be of little importance, except, if the earnings are in fact great, to refute a contention by its owners that by reason of physical depreciation, obsolescence, inadequacy or other causes, the plant cannot be operated profitably.

If, however, from a study of the industry as a whole, an analysis of the profits or losses that have been made by the various plants engaged in the same industry over a long period of years, by observing whether new factories are beginning to engage in the same industry in the same section of the country or existing ones are being abandoned, by noting whether either by reason of restrictive legislation or natural conditions the plants in the section under consideration are operating at a disadvantage as compared with their competitors in other parts of the country, it can be shown to the satisfaction of all reasonable men that a particular plant cannot fairly be expected to return to its owners through good years and bad more than a relatively meager average income, its market value cannot be greater than the capital sum upon which that anticipated income will constitute a fair return.

If a particular industrial plant cannot reasonably be expected to earn more than $80,000 a year (over and above a reasonable allowance for income on capital invested in quick assets) it is idle to insist that its market or taxable value is more than a million dollars, even if it can be shown that its replacement cost, with all proper deductions, would be twice that sum. Replacement cost under such conditions must yield as a test of value to reasonably probable earnings capacity.

Other Tests of Value

A few other tests of value of industrial plants may be considered, though none of them are conclusive or perhaps of much im-

portance except either as a check on the tests already explained or as a means of refuting testimony advanced to support a valuation according to such methods.

If the stock of a corporation is commonly bought and sold, so that the market value of the stock can be readily ascertained, the figure obtained by multiplying the market price per share by the number of all shares outstanding and deducting from the figure thus obtained the net value of the quick assets, an indication of the market's opinion of the value of the plant can be obtained. While such evidence may be of value in confirming or disproving opinion evidence of the probable future earnings or of the prospects of a particular industry, there are too many conditions governing the market value of shares of stock to entitle a valuation on such basis to great credit. The recent rejection by the directors of a large manufacturing enterprise of an offer for its physical properties in excess of the aggregate market value of its shares of stock indicates that in matters of valuation, the whole is not always the exact equal of the sum of the separate parts. When, however, there are many corporations engaged in the same industry and the average aggregate market value of their shares less net quick assets indicates a very general agreement as to the value of such plants, such an indication can by no means, be wholly disregarded.

Some taxpayers feel that the book value of their plants should be controlling. Book values are ordinarily based on cost less depreciation, and it has been shown already that in these days of fluctuating prices, cost is no longer deemed of much importance as a test of present value. If the book value is based upon a recent revaluation, it can be used against a taxpayer if inconsistent with his present contention, but it can rarely if ever be used, in his favor.

Over-optimistic reports to commissioners of corporations, or eulogistic circulars to present or prospective stockholders sometimes prove embarrassing to corporations making inconsistent contentions with respect to their local taxes, and if tax-cases were tried before juries might well prove fatal; but in my experience such evidence has not been given much weight by the tribunals which usually try tax cases, unless it is based upon an appraisal as exhaustive as that made by the experts who have testified in the case, and, although such evidence is undoubtedly competent, assessors should not place too much reliance upon it.

Insurance valuations, especially when made by the expert appraisers of the factory mutual companies and accepted by the insured, also have some weight, but it should be remembered that such valuations are based on replacement cost depreciated and do not take into consideration all the elements which affect market value.

Since an industrial plant is valued as a whole, and usually as a going concern, the value of the individual machines from the point of view of the secondhand dealer is not to be given any serious consideration, except when it is apparent that the most advantageous disposition of the factory would be the immediate sale of its equipment to the highest bidder.

Closed-Down Plants

With respect to closed-down plants, the considerations already discussed govern. If a plant is closed down merely on account of business misfortunes or mismanagement of the officers of the company operating it, and other plants in the same vicinity and with the same physical equipment and location are continuing to operate with reasonable prospects of profit, the closed-down plant should be valued on the same basis as other plants, with some slight allowance for the inevitable deterioration from idleness. If, however, a plant is closed down because it is apparent that owing to its poor location, permanent lack of demand for its product or other cause there is no reasonable prospect of its being operated at a profit, it can be valued only at a salvage value based on the sale for some other use of its machinery and other possible use of the buildings, or at the worst, at its junk scrap value.

Facts—The Guides of Business Today *

A Simple Method of Forecasting Sales

Not so very many generations since, the business order of the United States was vastly different from that existent today. The affairs of one community bore little relation to events elsewhere. Enterprise was individual; communication was slow; markets were limited; business activities were conducted in primitive manner.

Today all this is changed. Science has revolutionized methods of transportation and communication and this revolution has, in turn, revolutionized methods of doing business. No community, no industry, no business is in this age sufficient unto itself. None is apart from the world. Prosperity in New York in some way finds reflection in California; depression in the steel industry is felt, directly and indirectly, in every corner of the nation. Our country has passed from the individualistic simplicity of pioneer days into a tremendously enlarged and complex economic scheme of things.

New Talents Required

The successful operation of a business enterprise in the 20th century, therefore, requires talents and methods which were not needed fifty years ago. The average business of today, be it large or small, is both internally and in its external relations an intricate structure demanding expert and forward looking management.

The prosperous enterprise of this era is guided by facts, not by guesswork—by facts concerning its own activities, the activities of its particular trade or industry as a unit, and the activity of the business world in general. The steel manufacturer who would achieve the most satisfactory profits must know intimately the exact situation of his own business in all of its phases; he must know how his own costs, production, sales and earnings compare with those of his competitors who compose his industry as a whole; he must know, furthermore, how his customers are faring —what their purchasing power is, what their needs are, what their demands for his products are likely to be in the months ahead.

The detailed guidance, on a broad scale, of business enterprises according to facts is a comparatively recent development. In many industries and in many specific enterprises internal facts of a general nature have been known and observed for years, but it is within the brief space of fifteen or twenty years that the interpretation of business trends and the determination of policies upon the basis of facts, both statistical and non-statistical, has achieved recognition as a science, yet withal a science which may be mastered by every business man insofar as its use affects his own activities.

Two Kinds of Facts

There are two broad types of business facts—those relating to the internal operations of a specific business and those relating to external, more general business trends. And both internal and external business facts, as we may term them, fall into two classes, also-statistical and non-statistical. It is the purpose of the Codex Book Company to discuss from month to month practical methods of studying and interpreting business facts,—external and internal, statistics and non-statistical.

These discussions will in no way be theoretical and they will not be concerned with involved methods of analyzing either internal or external data. Practical examples will be given of ways and means employed by nationally known corporations to interpret in-

* Economic Trend.

ternal statistics and compare internal operations with business activity in general, particularly as this external activity affects internal operations or is likely to have any influence.

We shall describe the proper usage of such statistical methods as are needed for the interpreting of figures and shall give considerable attention to the proper presentation of statistics in chart form, for the quickest, clearest, most forceful method of revealing any set of facts is by means of a picture.

Road Maps of Industry

The ancient Chinese proverb to the effect that one picture is worth ten thousand words holds good in all fields of human endeavor. A person has an individuality strictly his own in a photograph; a word description of the same person, no matter how carefully given may usually be applied equally well to hundreds of other people. Business facts are revealed most vividly by pictures, charts and graphs. Charts, as one commentator has said, are the road maps of trade and industry.

Charts portray striking trends, facts and relationships. They bristle with question marks and thus develop analytical thinking and investigation. They reveal facts which otherwise would not be clearly or quickly evident. Used properly, they show far more adequately than columns of figures the various trends of business as a whole and the trends of operations in a single industry or a specific business enterprise. Charts may be used by the individual business to portray financial conditions, production trends, sales trends, costs.

Because big business corporations are today using charts comprehensively and with very profitable results, because these same corporations in their elaborate statistical departments which they have found it necessary to establish, are making a broad use of business statistics, external and internal, we hope in forthcoming issues of "Economic Trends" to suggest practical and simple means of utilizing business statistics and charts—methods which may be followed with profit by any business concern no matter what its size or its type of activity.

Sales Forecasting Formula

To illustrate the kind of methods we intend to suggest, we may here, perhaps, give a simple formula for forecasting sales. We start with this because sales, particularly those which lie ahead, are of outstanding importance to any business.

The formula is elementary, but it may be used with expenditure of very little time and data. In fact, the only information needed consists of actual sales figures, month by month, for several years back.

The monthly sales figures should be listed in order by years and months. The next step is to divide the actual sales figure for each month by the sales figure for the same month of the previous year. Thus, divide the January, 1928, figure by the January, 1927, figure; the February, 1928, figure by the February, 1927, figure; and so on. This process of division gives a series of percentages.

The third step is to plot the actual sales figures and the percentage figures on a graphic chart. A chart should be used because it makes clear the relationships between the two sets of figures.

The two sets of figures should be plotted so that the two resultant lines do not cross. This can be done by selecting a different scale for each curve and by placing one scale on the left hand side of the chart and another scale on the right-hand side. The figures are then plotted in points and joined in continuity by a line.

Returning to our sales figures, in actual and percentage form, which we have plotted, we find that turning points in the line representing percentages of the year before will generally occur from one to four months in advance of the line of actual sales. Thus it usually happens that a down-trend in the percentage line for two consecutive months means a down-turn in actual sales shortly afterwards. Similarly, uptrends are forecast with a fair degree of reliability.

If actual monthly sales figures are found to fluctuate widely or irregularly, preventing a fairly smooth, dominating curve, the actual sales totals may be expressed in three-month moving average form. That is, the sales figure for any given month as it would be used for forecasting purposes as here outlined would be an average of the latest three months centered on the last month. The March figure would be the average for January, February and March. The April figure would be the average of sales in February, March and April, and so on. Such a moving average, while less satisfactory than actual figures, removes irregular and wide fluctuations to a certain degree.

The foregoing method of forecasting sales trends is, of course, very simple, but it serves to show how easily internal statistics of a company's own operations may be utilized with profit.

Percentages and Index Numbers

We wish to point out here, that the percentages which we have described constitute index numbers in their most elementary form. For fundamentally, index numbers, of which so much is heard in connection with statistics, are nothing but percentages. In their more complex forms, index numbers are the result of the use of intricate formulas with which these bulletins will not deal.

If any business man wishes to compare two or more sets of figures, which are not closely related, he can do so by reducing all of the figures to percentages of the same period—month, week or year. Thus, if it is desired to compare sales figures for one company with much larger sales figures for the industry as a whole, the comparison may be made by showing both figures as percentages of the same month of an identical year or as percentages of the average month of some one year. The resultant two sets of percentages can then be plotted on the same diagram, with the same scale, and can quickly be compared. If actual figures were used, one line would come far above the other, unless two scales were employed, and direct comparisons would be more difficult.

We wish to emphasize the ever increasing necessity that business men make full use of their own statistics and the statistics of business generally if they are to keep pace with the march of progress.

British Paper Industry Improves

WASHINGTON, D. C., May 1, 1929.—Great Britain's paper industry reported a satisfactory year during 1928, with a good demand from both foreign and domestic markets and good employment in all plants except the fine paper mills, according to the Department of Commerce.

Production, particularly in the newsprint and kraft paper sections, where several new machines were installed, greatly increased, and conditions at the end of 1928 indicated that the rate of production in these fields would be maintained or even increased during the succeeding months, according to B. M. Frost, Paper Division of the Department.

Imports of paper and paper manufactures were 10 per cent higher in volume during 1928 than in the preceding year, amounting to 1,057,712 short tons, although the value of such receipts shows an increase of only 5 per cent to $84,044,412. This latter condition resulted from the fact that paper prices as a whole showed a downward trend during 1928, particularly in such lower priced papers as printing and wrapping, which made up a proportionately larger part of the 1928 receipts than was the case in the preceding year. This same situation obtained in the export trade, where the volume of shipments increased by 5 per cent, to 254,189 tons, while the increase in value was only 1 per cent to $45,223,888.

The wood pulp market was extremely quiet up to June, British paper makers evincing a reluctance to make more than the most necessary purchases in view of what they considered the unwarrantably high prices asked by Swedish producers. There was a steady increase in importations in this line during the second half of the year, however, particularly of easy-bleaching and strong sulphites, which have been in unusually good demand. Parallelling the increased production of newsprint, there was a rising demand for groundwood as the year progressed.

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Testimonial Dinner for T. T. Webster

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, April 30, 1929.—More than 200 members of the Miami Valley Traffic Club assembled last Tuesday evening at the Miami Hotel in this city to honor T. T. Webster, general traffic manager of the Mead pulp and paper interests who assumes his post with this concern in New York City May 1, and R. W. Kruse, recently chief clerk and who has been promoted to assistant traffic manager to Mr. Webster.

The testimonial dinner was one of the most elaborate given here for many months. Virtually every town in the valley was represented and many distant cities sent representatives to join in the tributes paid. The major railway companies sent their chief officials, all of whom came from various sections of the country in special cars.

Mr. Webster was presented with a bound volume of testimonials from his friends and former associates in this section of the United States. In addition, he received a desk set from the officers and members of the Miami Valley Traffic Club.

Mr. Kruse was presented with a cigarette case and lighter to match, as a token of esteem and appreciation by his fellow-members. Both men received floral tributes to present to their wives as a gesture of respect from club members.

Mr. Webster goes to New York with a vast amount of experience in his line and with the record of having accomplished national results for the shippers in promoting a cooperative spirit with the carriers. He served two terms as president of the Associated Traffic Clubs of America and wielded an influence that was widespread. While the Miami Valley will lose an able executive his friends are aware of the fact that he still will be associated with the Mead pulp and paper interests and still will be one of the club members.

Starts Another Generator at Bryson, Inc.

OTTAWA, Ont., April 30, 1929.—The Gatineau Power Company, one of the units of the Canadian Hydro-Electric Corporation, Limited, controlled by the International Hydro-Electric System, a subsidiary of the International Paper and Power Company, has started the second 25,000 horsepower generator in its Bryson, Quebec, hydro-electric plant. Located on the Ottawa River, fifty miles above the City of Ottawa, the Bryson station is designed for 75,000 horsepower in three units of 25,000 horsepower each, of which two are now installed and in operation.

With the starting of the second generator in the Bryson powerhouse, the Gatineau Power Company now has hydro-electric plants on the Ottawa River and its tributaries of an aggregate installed capacity of 562,600 horsepower, slightly greater than the installed capacity on the American side of Niagara Falls. Of this power, 436 horsepower is in the hydro-electric plants of the company on the Gatineau River, and the balance, 126,600 horsepower, is on the Ottawa River and its other tributaries.

In the first three months of this year, the Gatineau Power Company produced 482,859,000 kilowatt hours of electric energy, two and one-quarter times the output of the company in the corresponding period of 1928, and the greatest for any quarter in the history of the company.

Earl Couglar Leaves DeGrasse Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

CANTON, N. Y., April 29, 1929—Announcement is made by the DeGrasse Paper Company, operating a plant at Pyrites, of the resignation of Earl Couglar from the executive force of the firm after a service extending nearly 19 years. For the past several years in addition to his duties as office manager he had also served in the capacity as safety supervisor at the mill. He has already left for New York City where he will become associated with the International Paper Company in the manufacturing department of the central office. Mr. Couglar entered the employ of the DeGrasse Company shortly after his graduation from a Syracuse business school when operations were under the supervision of Frank Augbury. In addition to his duties at the mills he has also been active in Community work and for several years served as a member of the Pyrites educational board. His position as safety superintendent will be taken by Rene C. Dompnier, who has been connected with the office force for several years.

Boston Paper Market Fairly Active

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., April 29, 1929.—Demand for paper in this market is fair as a whole, although in some quarters where it had been lively for some time the call has lessened considerably. The box board market, although still considerably upset, continues to improve in regard to the price situation. A firm here has received word from a mill that its minimum price on chip board is now $37.50, regarded as "a step in the right direction." The former minimum of this mill was $35, but even at the advance it is stated that there is a loss of $2.50 per ton delivered Boston. Some continue to sell chip board at $35 and filled news board at $37.50. A manufacturer has sent out a notice, dated April 24, to sell single manila lined chip not less than $50, and orders have been secured on this basis. It is said to be very likely that other mills will follow suit. The general market on this commodity has been $47.50. The demand for box board has been rather quiet during the last week. Old papers, bagging and rags are moving moderately, "nothing to brag about," to use an expression of the trade. Prices are at practically the same levels.

Cost Association To Meet at Woronoco

An interesting meeting has been arranged by the Connecticut Valley Division of the Cost Association of the Paper Industry, which is to be held on Tuesday, May 21, at the Strathmore Inn, Woronoco, Mass. The speakers will be:

J. A. C. A. Kavanagh, statistician, American Paper and Pulp Association, who will give a talk on "The Use of Statistical Data in the Paper Industry," and Morris C. Dobrow, assistant secretary of the Writing and Tissue Paper Manufacturers Associations, whose subject will be "Graphic Charts in the Paper Industry."

As the use of graphic charts is becoming more general, an interesting session is anticipated, and as the usual good dinner will be served at the Strathmore Inn, the committee hopes there will be a good turnout for this final meeting of the season.

Reservations should be forwarded to H. P. Carroll, secretary, Connecticut Valley Division of the Cost Association of the Paper Industry, American Writing Paper Company, Inc., Holyoke, Mass.

Sherman Paper Co. Pensions Barney Leddy

[FROM OUR REGULAR CORRESPONDENT]

FELTS MILLS, N. Y., April 29, 1929.—One of the oldest employees of the Sherman Paper Company, in the person of Barney Leddy has been retired on pension, according to J. Victor Barron, vice president and general manager of the company. Mr. Leddy has been in the employ of the firm for the past 45 years and in recent years he had held the position as general utility man about the plant. It is believed that he has served in the paper making industry longer than any living resident of this section. He started in the employ of the Sherman Paper Company when it was first established and he has worked continuously for the organization since that time. He has had an unusual record in the fact that he never took a vacation and only twice in his lengthy service was compelled to stay from his duties because of illness. He is 70 years of age and has witnessed many changes in the papermaking industry.

Opens Paper House at Harlingen

HARLINGEN, Tex., April 29, 1929.—The Verhaten Paper Company has opened a wholesale paper house here with a complete line of fine and coarse papers.

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Embossing Calenders
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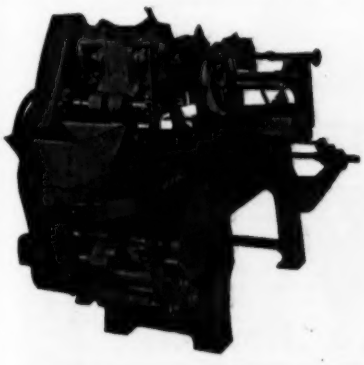

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NEW YORK IMPORTS

WEEK ENDING APRIL 27, 1929

SUMMARY

Wall paper .....50 bls., 6 cs.
Paper hangings .....47 bls., 18 cs.
News print .....847 rolls
Printing paper .....205 rolls, 110 cs.
Wrapping paper .....92 cs.
Wafer paper .....8 cs.
Silk paper .....25 cs.
Condenser paper .....10 cs.
Tissue paper .....57 cs.
Drawing paper .....46 cs.
Filter paper .....54 cs.
Decalcomania paper .....85 cs.
Colored paper .....105 cs.
Writing paper .....2 cs.
Litho paper .....40 cs.
Baryta coated paper .....151 cs.
Gold coated paper .....8 cs.
Surface coated paper .....63 cs.
Metal coated paper .....11 cs.
Photo paper .....141 cs.
Parchment paper .....3 cs.
Calender paper .....8 bls.
Stencil paper and ink.....88 cs.
Straw board .....514 rolls
Miscellaneous paper.....28 rolls, 21 bls., 199 cs.

WALL PAPER

Universal Car Loading Co., Stuttgart, Bremen, 1 cs.
J. E. Bernard & Co., Stuttgart, Bremen, 2 cs.
F. J. Emmerich, Deutschland, Hamburg, 4 bls.
Irving Trust Co., Deutschland, Hamburg, 12 bls.
Globe Shipping Co., Deutschland, Hamburg, 3 bls.
F. A. Binder, Columbus, Bremen, 4 bls.
R. F. Downing & Co., Minnetonka, London, 13 bls., 2 cs.
W. H. S. Lloyd & Co., American Shipper, London, 4 bls.
F. J. Emmerich, Cedric, Liverpool, 10 bls.
Hudson Forwarding & Shipping Co., Mauretania, Southampton, 1 cs.

PAPER HANGINGS

A. C. Dodman, Jr., Inc., Samaria, Liverpool, 2 bls.
A. C. Dodman, Jr., Inc., Republic, Bremen, 1 ble.
A. C. Dodman, Jr., Inc., Cedric, Liverpool, 15 bls.
Whiting & Patterson Co. Inc., Berengaria, Southampton, 11 cs.
W. H. S. Lloyd & Co., Minnetonka, London, 29 bls., 7 cs.

NEWS PRINT

Parsons & Whittemore, Inc., Stuttgart, Bremen, 434 rolls.
Perkins Goodwin & Co., Deutschland, Hamburg, 51 rolls.
F. Henjes, Jr., Deutschland, Hamburg, 66 rolls.
Journal of Commerce, Kolsnaren, Hango, 70 rolls.
A. S. Zabriski, Kolsnaren, Hango, 76 rolls.
Stora Kopparburg Corp., Drottningholm, Gothenburg, 77 rolls.
Parsons & Whittemore, Inc., Westphalia, Hamburg, 73 rolls.

PRINTING PAPER

P. C. Zuhlke, Stuttgart, Bremen, 27 cs.
Tamm & Co., Stuttgart, Bremen, 13 cs.
Dingelstedt & Co., Stuttgart, Bremen, 3 cs.
——, Stuttgart, Bremen, 180 rolls.
Keuffel & Esser Co., Deutschland, Hamburg, 25 rolls.
Universal Car Loading Co., American Shipper, London, 3 cs.
Hoboken Trust Co., Republic, Bremen, 4 cs.
P. C. Zuhlke, Pennland, Antwerp, 43 cs.
Nepaco Paper Co., Pipestone County, Havre, 13 cs.
G. W. Sheldon & Co., Mauretania, Southampton, 4 cs.

WRAPPING PAPER

E. Dietzgen & Co., Pennland, Antwerp, 3 cs.
Birn & Wachenheim, Pennland, Antwerp, 89 cs.

WAFER PAPER

W. L. Haas, Statendam, Rotterdam, 8 cs.

SILK PAPER

P. D. Dressler, Statendam, Rotterdam, 25 cs.

CONDENSER PAPER

Globe Shipping Co., Statendam, Rotterdam, 10 cs.

TISSUE PAPER

F. B. Vandegrift & Co., Samaria, Liverpool, 3 cs.
F. C. Strype, Samaria, Liverpool, 3 cs.
J. B. Mast & Co., Augustus, Genoa, 4 cs.
Old Master Paper & Pulp Co., Deutschland, Hamburg, 45 cs.
B. F. Drakenfeld & Co., Cedric, Liverpool, 2 cs.

DRAWING PAPER

Keuffel & Esser Co., Deutschland, Hamburg, 30 cs.
H. Reeve Angel & Co., Inc., Caronia, London, 15 cs.
P. C. Zuhlke, Pennland, Antwerp, 1 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Caronia, London, 19 cs.
A. Giese & Son, Olympic, Southampton, 35 cs.

DECALCOMANIA PAPER

C. W. Sellers, Deutschland, Hamburg, 11 cs.
L. A. Consmiller, Deutschland, Hamburg, 24 cs.
C. W. Sellers, Columbus, Bremen, 10 cs.
B. F. Drakenfeld & Co., Cedric, Liverpool, 40 cs. (duplex).

COLORED PAPER

S. Gilbert, Columbus, Bremen, 22 cs.
H. D. Catty & Co., Pennland, Antwerp, 2 cs.
Borden Riley Paper Co., Pennland, Antwerp, 11 cs.
International Forwarding Co., Pennland, Antwerp, 1 cs.
Gevaert Co. of America, Pennland, Antwerp, 69 cs.

WRITING PAPER

J. Wanamaker, Berengaria, Southampton, 1 cs.
J. E. Bernard & Co., Mauretania, Southampton, 1 cs.

LITHO PAPER

A. W. Putnam, Japanese Prince, Hong Kong, 40 cs.

BARYTA COATED PAPER

Globe Shipping Co., Stuttgart, Bremen, 95 cs.
P. C. Zuhlke, Stuttgart, Bremen, 56 cs.

GOLD COATED PAPER

F. Murray Hill, Stuttgart, Bremen, 8 cs.

SURFACE COATED PAPER

Phoenix Shipping Co., Deutschland, Hamburg, 5 cs.
Quality Art Novelty Co., Deutschland, Hamburg, 1 cs.
P. C. Zuhlke, Pennland, Antwerp, 40 cs.
J. J. Shore & Co., West Arrow, Antwerp, 17 cs.

METAL COATED PAPER

Universal Car Loading Co., Deutschland, Hamburg, 1 cs.
Hensel, Bruckman & Lorbacher, Columbus, Bremen, 10 cs.

PHOTO PAPER

Gevaert Co. of America, Pennland, Antwerp, 134 cs.
J. H. Schroeder Banking Co., Stuttgart, Bremen, 6 cs.
American Express Co., Mauretania, Southampton, 1 cs.

PARCHMENT PAPER

F. C. Strype, Menapier, Antwerp, 3 cs.

CALENDER PAPER

T. Tiedeman & Sons, Inc., West Arrow, Antwerp, 8 bls.

STENCIL PAPER AND INK

Arlac Dry Stencil Co., Deutschland, Hamburg, 88 cs.

STRAW BOARD

R. Wilson Paper Corp., Statendam, Rotterdam, 167 rolls.
A. Vuyk, Statendam, Rotterdam, 347 rolls.

MISCELLANEOUS PAPER

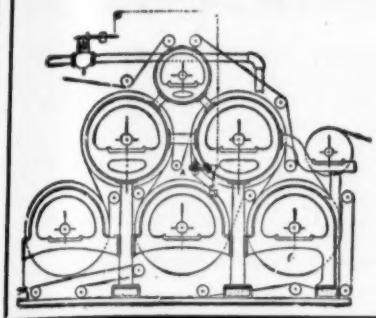
Japan Paper Co., Augustus, Genoa, 13 cs.
Davies, Turner & Co., Augustus, Genoa, 167 cs.
Arkell Safety Bag Co., Schenectady, Gothenburg, 28 rolls.
Manhattan Paper Co., Schenectady, Gothenburg, 21 bls.
Universal Car Loading Co., Columbus, Bremen, 15 cs.
E. H. Sargent & Co., Drottningholm, Gothenburg, 2 cs.
Freedman & Slater, Republic, Bremen, 2 cs.

RAGS, BAGGINGS, ETC.

Philadelphia National Bank, Stuttgart, Bremen, 23 bls. rags.
Royal Manfg. Co., Maryland, Havre, 80 bls. thread waste.
Castle & Overton, Inc., Maryland, Havre, 221 bls. rags.
Brown Bros. & Co., Maryland, Havre, 27 bls. rags.
Equitable Trust Co., Maryland, Havre, 122 bls. rags.
P. Garvan, Inc., Sud Africano, Havana, 97 bls. rags.
Jaffe Products Co., Sud Africano, Havana, 67 bls. rags.
H. J. Baker & Bro., Sud Africano, 85 bls. fleshings.
J. Aron & Co., Sud Africano, Havana, 16 bls. fleshings.
E. J. Keller Co., Inc., Exporter, ——, 195 bls. rags.
Castle & Overton, Inc., Statendam, Rotterdam, 128 bls. rags.
Leigh Textile Co., Statendam, Rotterdam, 45 bls. waste paper.
Castle & Overton, Inc., Eastside, Dublin, 123 bls. rags.
Brown Bros. & Co., Eastside, Dublin, 62 bls. waste paper.
Anglo South American Trust Co., Kioto, Manchester, 177 bls. rags.
R. F. Downing & Co., Minnetonka, London, 183 bls. rags.
Gallagher & Ascher, Minnetonka, London, 26 bls. rags.
D. I. Murphy, Republic, Bremen, 120 bls. bagging.
F. Stern, Republic, Bremen, 170 bls. rags.
Kidder Peabody Accep. Corp., Republic, Bremen, 69 bls. rags.
Van Oppen & Co., Republic, Bremen, 73 bls. rags.
Guaranty Trust Co., Caronia, London, 47 bls. rags.
Equitable Trust Co., Cedric, Liverpool, 64 bls. rags.
G. W. Millar & Co., California, Glasgow, 38 bls. rags.
Castle & Overton, Inc., California, Glasgow, 63 bls. rags.
Philadelphia National Bank, California, Glasgow, 87 bls. rags.
Castle & Overton, Inc., Menapier, Antwerp, 94 bls. rags.
Amtorg Trading Corp., Westphalia, Hamburg, 68 bls. flax waste.
Amtorg Trading Corp., Westphalia, Hamburg, 168 bls. rags.
The Barrett Co., Westphalia, Hamburg, 259 bls. rags.
Katzenstein & Keene, Inc., City of Brisbane, Antwerp, 56 bls. rags.
A. H. Searle, City of Brisbane, Antwerp, 149 bls. cotton waste.
Darmstadt, Scott & Courtney, City of Brisbane, Antwerp, 89 bls. bagging.
W. Steck & Co., City of Brisbane, Antwerp, 137 bls. jute card waste.
Interstate Trust Co., City of Brisbane, Antwerp, 135 bls. flax waste.
E. J. Keller Co., Inc., City of Brisbane, ——, 391 bls. flax waste.
E. J. Keller Co., Inc., City of Brisbane, ——, 120 bls. rags.
Guaranty Trust Co., Express, Leghorn, 311 bls. bagging.
Leigh Textile Co., Hinnoy, Barcelona, 18 bls. cotton waste.
W. Schall & Co., Hinnoy, Barcelona, 376 bls. rags.
E. J. Keller Co., Inc., Kentucky, ——, 420 bls. flax waste.
E. Butterworth & Co., Inc., West Arrow, Antwerp, 132 bls. rags.
American Express Co., West Arrow, Antwerp, 29 bls. rags.
Salomon Bros. & Co., West Arrow, Antwerp, 102 bls. flax waste.
E. Mayer, West Arrow, Rotterdam, 12 bls. rags.
Castle & Overton, Inc., West Arrow, Rotterdam, 507 bls. bagging.
C. Belsky, West Arrow, Rotterdam, 134 bls. rags.
Kidder Peabody Accep. Corp., West Arrow, Rotterdam, 142 bls. rags.
E. J. Keller Co., Inc., West Arrow, ——, 26 bls. rags.
V. Galaup, Pipestone County, Dunkirk, 40 bls. rags.
Salomon Bros. & Co., Pipestone County, Dunkirk, 233 bls. flax waste.
V. Galaup, Pipestone County, Havre, 70 bls. rags.
B. D. Kaplan, Pipestone County, Havre, 42 bls. rags.

(Continued on page 72)

The Pickles Drying Regulator



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YOU'LL MAKE NO MISTAKE IN ACCEPTING IT

Pickles Drying Regulator

will do everything we claim for it and more. The test costs you nothing until you are satisfied. Many mills tried one and now have every machine equipped. Write for list of users and other information.

W. F. PICKLES Buckland, Conn.

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QUALITY PULPS

IMMEDIATE DELIVERY FROM DOCK

F:HAGA "FORSHAGA" Bleached Sulphite

KRAFT HURUM HORWAY SPECIAL "HURUM SPECIAL" Extra Strong Kraft

KOOS BAC "BAMBLE" Extra Strong Kraft

Fresh Monthly Consignments from Abroad—No Closed Winter Season

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THE DRAPER FELTS

All kinds and styles of Felts for all kinds and styles of Papers.

Write us about your Felt problems and let us help you reduce your Felt Costs—we will call anywhere at any time.

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Woolen manufacturers since 1856

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FOURDRINIER-CYLINDER-WASHER

WIRES

EASTWOOD WIRE CORPORATION, BELLEVILLE N.J. U.S.A.

Imports of Paper and Paper Stock

(*Continued from page 70*)

J. Cohen Son, Pipestone County, Havre, 7 bls. rags.
Castle & Overton, Inc., Pipestone County, Havre, 79 bls. rags.

OLD ROPE

Brown Bros. & Co., New York City, Bristol, 80 coils.
Brown Bros. & Co., Statendam, Rotterdam, 63 coils.
Brown Bros. & Co., Menapier, Antwerp, 53 coils.
Brown Bros. & Co., Westphalia, Hamburg, 28 coils.
E. Butterworth & Co., Inc., Cedric, Liverpool, 75 bls.
International Purchasing Co., Express, Genoa, 196 coils.

CHINA CLAY

J. Dixon Crucible Co., Deutschland, Hamburg, 400 bags.

CASEIN

National City Bank, Vauban, Buenos Aires, 2,848 bags.
Tradesman's National Bank, Vauban, Buenos Aires, 417 bags.
National City Bank, The Angeles, Buenos Aires, 50 bags, 6,615 lbs.
National City Bank, The Angeles, Buenos Aires, 2,084 bags, 124,980 kilos.
National City Bank, Castillian Prince, Buenos Aires, 834 bags, 50,040 kilos.
Kalbfleisch Corp., Southern Cross, Buenos Aires, 1,258 bags.
Atterbury Bros., Inc., Southern Cross, Buenos Aires, 2,500 bags.

WOOD PULP

Atterbury Bros., Inc., Fred. VIII, Oslo, 500 bls. wood pulp.
O. E. Kiaer, Stavangerfjord, Greaker, 500 bls. sulphite.
O. E. Kiaer, Kolsnaren, Hango, 300 bls. wood pulp.
Parsons & Whittemore, Inc., Drottningholm, Gothenburg, 150 bls. kraft pulp.
E. M. Sergeant & Co., Drottningholm, Gothenburg, 299 bls. dry soda pulp.
Kidder Peabody Accep. Corp., Drottningholm, Gothenburg, 120 bls. kraft pulp.
Pagel, Horton & Co., Inc., City of Fairbury, Stockholm, 1,250 bls. sulphite, 254 tons.

WOOD PULP BOARDS

Wilkinson Bros., Inc., Drottningholm, Gothenburg, 32 rolls.
Lagerloef Trading Co., Westphalia, Hamburg, 361 bls., 300 rolls.

WOOD FLOUR

B. L. Soberski, Stavangerfjord, Frederickstad, 2,700 bags.
State Chemical Co., Statendam, Rotterdam, 400 bags.
The Burnet Co., Drottningholm, Gothenburg, 653 bags.

BOSTON IMPORTS

WEEK ENDING APRIL 27, 1929

Brown Bros. & Co., Schenectady, Gothenburg, 1,320 bls. sulphate, 268 tons.
J. Andersen & Co., Schenectady, Gothenburg, 3,250 bls. sulphite, 660 tons.
The Borregaard Co., Inc., Schenectady, Gothenburg, 1,750 bls. wood pulp, 355 tons.
Perkins Goodwin & Co., Schenectady, Gothenburg, 2,400 bls. sulphate, 406 tons.
——, City of Fairbury, Hango, 2,286 bls. sulphate, 456 tons.
——, City of Fairbury, Hango, 4,513 bls. sulphite, 767 tons.
Pagel, Horton & Co., City of Fairbury, Stockholm, 3,500 bls. sulphite, 550 tons.
Pagel, Horton & Co., City of Fairbury, Stockholm, 6,500 bls. sulphate, 1,320 tons.
R. Bishop Manfg. Co., Pipestone County, Dunkirk, 111 bls. rags.
Salter & Sons, Pipestone County, Dunkirk, 4 bls. rags.
R. H. Stearns Co., Pipestone County, Havre, 3 cs. writing paper.
T. D. Downing & Co., Pipestone County, Havre, 4 cs. writing paper.
Draper & Co., Pipestone County, Havre, 3 bls. rags.
Irving Trust Co., Pipestone County, Havre, 53 bls. rags.
Bank of Commerce & Trust Co., Pipestone County, Havre, 54 bls. rags.
C. Belsky, Pipestone County, Havre, 53 bls. rags.
W. Schall & Co., Pipestone County, Havre, 139 bls. bagging.
Ayres W. C. Jones Co., Pipestone County, Havre, 32 bls. flax waste.
Castle & Overton, Inc., Pipestone County, ——, 60 bls. rags.
Irving Trust Co., Pipestone County, Havre, 68 bls. old rope.
Castle & Overton, Inc., Legie, Germany, 2,688 bls. wood pulp.
Castle & Overton, Inc., Missouri, London, 92 bls. waste paper.

PORTLAND IMPORTS

WEEK ENDING APRIL 27, 1929

The Borregaard Co., Inc., Schenectady, Gothenburg, 1,000 bls. wood pulp, 203 tons.
Waterfalls Paper Mills, Schenectady, Gothenburg, 3,020 bls. wood pulp, 613 tons.
Pagel, Horton & Co., Inc., City of Fairbury, Stockholm, 1,000 bls. sulphite, 203 tons.
Lagerloef Trading Co., City of Fairbury, Hango, 1,374 bls. wood pulp, 228 tons.
——, City of Fairbury, Hango, 1,169 bls. sulphate, 229 tons.
——, City of Fairbury, Hango, 9,049 bls. sulphite, 1,593 tons.

BALTIMORE IMPORTS

WEEK ENDING APRIL 27, 1929

E. Butterworth & Co., Inc., West Arrow, Antwerp, 58 bls. bagging.
S. Shapira & Son, West Arrow, Antwerp, 33 bls. rags.
Congoleum Nairn Co., West Arrow, Antwerp, 688 bls. rags.
Katzenstein & Keene, Inc., West Arrow, Antwerp, 575 bls. rags.
Castle & Overton, Inc., Legie, Germany, 7,775 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING APRIL 27, 1929

E. Butterworth & Co., Inc., West Arrow, Antwerp, 140 bls. bagging.
Darmstadt, Scott & Courtney, West Arrow, Antwerp, 208 bls. rags.

PHILADELPHIA IMPORTS

WEEK ENDING APRIL 27, 1929

J. A. Steer & Co., New York City, Bristol, 154 bls. old rope.
Bank of The Manhattan Co., New York City, Bristol, 220 bls. rags.
Royal Manfg. Co., Maryland, Havre, 20 bls. thread waste.
Union Bank & Trust Co., Maryland, Havre, 57 bls. old rope.
E. J. Keller Co., Inc., Maryland, Havre, 223 bls. rags.
Neidich Process Co., Kolsnaren, Hango, 230 cs. tissue paper.
Johnston Paper Co., Kolsnaren, Hango, 119 bls. news print.
Paper House of Pennsylvania, Kolsnaren, Hango, 23 cs. printing paper.
——, Kolsnaren, Hango, 4,608 bls. sulphate pulp.
——, Kolsnaren, Hango, 16,200 bls. sulphite pulp.
Castle & Overton, Inc., Amasis, Germany, 3,289 bls. wood pulp.
Castle & Overton, Inc., Natirar, Germany, 49 bls. rags.
Castle & Overton, Inc., Exanthia, Spain, 571 bls. rags.
Castle & Overton, Inc., K. I. Luckenbach, Japan, 167 bls. rags.
Castle & Overton, Inc., Carnia, Italy, 35 bls. rags.
E. J. Keller Co., Inc., Burgerdyk, ——, 15 bls. rags.
E. J. Keller Co., Inc., Ambridge, ——, 66 bls. rags.
E. J. Keller Co., Inc., Ambridge, ——, 79 bls. old rope.
E. J. Keller Co., Inc., Hinnoy, ——, 664 bls. rags.

Dr. Schwalbe Goes With Dill & Collins

Dr. Hellm C. Schwalbe, chemical and research engineer will be associated with Dill & Collins Company of Philadelphia, starting May 1. Dr. Schwalbe formerly worked in the research department of the Kimberly-Clark Company, Appleton, Wis. Previous to this, Dr. Schwalbe has been chief of the chemical department of Kraus & Bauman Company, a prominent coating mill in Dresden, Germany. He is the son of Professor Schwalbe of the Forest School, in Eberswald, director and leading authority on cellulose and cellulose chemistry.

C. W. Smith Made Vice President

At a meeting of the Board of directors of the Central Paper Company held at Muskegon, Mich., on April 19th, C. W. Smith was elected to succeed H. D. Eliason, resigned, as vice-president and general manager. Mr. Smith had held the position of assistant vice-president and general manager, and has been with the company in the capacity of plant engineer since 1916.

Louis Bittner, who has been a member of the board of the company, was also elected vice-president.

Awards for Government Paper

WASHINGTON, D. C., May 1, 1929—Baron, Duer & Koch Paper Company have been awarded the contract for furnishing the Government Printing Office with 60,000 pounds of various colored calendered tag board in 23½ inch rolls at 7.84 cents per pound. They will also furnish 15,000 manila same at 7.2 cents. Bids for these items were received on April 12.

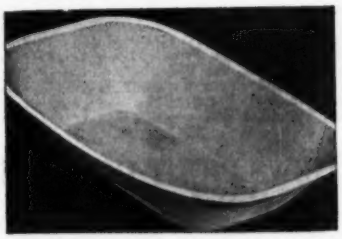
The R. P. Andrews Paper Company will furnish 23,100 pounds (150,000 sheets) of 75 per cent rag laid antique book paper, 24 x 38 134, at 18.4 cents per pound, bids for which were received on April 1.

Barton, Duer & Koch will also furnish 5,000 sheets of 22 x 28 red railroad board at $32.12 per M sheets, bids for which were received on April 8.

Goes With Dunn Sulphite Paper Co.

F. J. Reilly, formerly connected with the Rondout Paper Mills, Inc., Napanock, N. Y. as night superintendent, has taken a position as shift superintendent with the Dunn Sulphite Paper Company, Port Huron, Mich.

Get your share



of the increased market for Paprus Butter Dishes. These dishes are absolutely waterproof—hold their shape like wood—sell for less than paper! They are moulded from pulp in one piece. No folds—no staples. White, sanitary, attractive. More and more dealers are using them. Let them build business for you.

Paprus Dishes used as covered container

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General Sales Offices: GRAYBAR BLDG., NEW YORK
Factory: Waterville, Maine JOHN M. HART COMPANY INC., *Manager of Sales*

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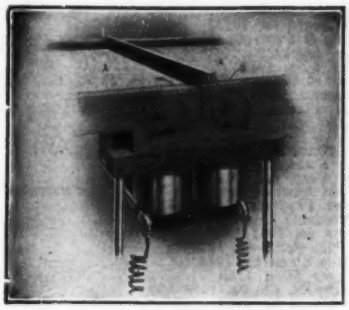
Are you making paper for insulating purposes? If so, our *Type B Iron Extractors* are a necessary part of your equipment.



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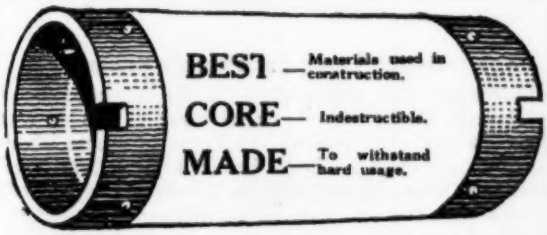

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Elixman Paper Core Company
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Horizontally Split Casing Double Suction Pumps

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The name protects and guarantees you satisfaction.
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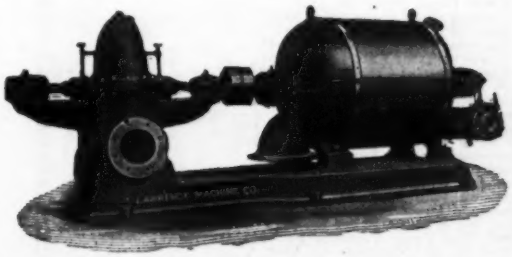

Lawrence pumps for all conditions and services. Forty-four years of practical experience with centrifugal pump development places us among the leaders. Our efforts have been rewarded by the acceptance of our product in general.

Thousands of installations and the successful performance of our pumps should be sufficient proof of our ability to handle your pumping problems. Our engineering force is at your command.

Have only Lawrence Pumps, manufactured by the

Lawrence Machine Company
361 Market St. **Lawrence, Mass.**

Paper Mill Stocks and Bonds

Quoted by Taylor & White, 45 Wall street, New York City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	ASKED
Abitibi Power & Paper 5s, 1943	90	91
Abitibi Power & Paper 6s, serially to 1934	100	102
American Writing Paper 6s, 1947	81	87
Bastrop Pulp & Paper 6½s, 1940	103	105½
Bedford Pulp & Paper 6½s, 1942	97	100
Belgo-Canadian Paper 6s, 1943	100	103
British-Columbia Pulp & Paper 6s, 1950	89	92
Brown Paper Mills Serial 6s, 1941	97	100
Brown Company 5½s, 1946	98	101
Bryant Paper 6s, 1942	98	101½
Canadian Paper Board 7s, 19337	97	99½
Cape Breton Pulp & Paper 6s, 1932	103	...
Celotex Company 6s, 1929	95	99
Celotex Company 6½s, 1939	100	102
Celotex Company of Chicago, Debenture 6s, 1936	95	98
Central Paper Company Serial 6½s, 1942	86	89
Central Paper 7s, 1934	78	...
Champion Coated Paper Serial 6½s, 1934	100	...
Champion Coated Fibre Notes 6s, 1941	100	102
Champion Fibre Notes 6s, 1941	100	102
Champion Fibre Notes 8s, 1930	95	...
Champion Paper Corp. 6s, 1945	95	98
Container Corp. of America Debenture 6s, 1936, ex-warrants	101	104
Continental Paper Products 6½s, 1943	90	99
Cornell Wood Products 7½s, 1937	103	...
Crown Willamette 6s, 1951	101	102
Dells Paper & Pulp Serial 6s, 1938	95	98
Dixon Board Mills Serial 6s, 1942	80	...
Donnaconna Paper 5½s, 1948	93	...
Eastern Manufacturing Co. 7s, 1938	97	100
Escanaba Paper Serial 6s, 1939	98	100
Escanaba Paper 6½s, 1935	96	99
Filer Fibre Serial 7s, 1935	90	95
Fort Irange Paper 7s, 1942	101	...
Fort William Paper 6s, 1946	100	104
Fraser Company 6s, 1950	103	105
Hammermill Paper Serial 6s, 1939	100	...
Hawley Pulp & Lumber 6s, 1946	96	...
Hawthorne Paper Company 6s, 1937	80	...
Roberg Paper & Fibre 7s, 1937	94	97
Industrial Fibre Corp. Debenture 8s, 1933	100	...
Itasca Paper & Prairie River Power Serial 5½s, 1938	99½	...
Itasca Paper & Prairie River Power Serial 6s, 1938	99	...
Jessup & Moore First 6s, 1945	83	90
Kalamazoo Vegetable Parchment 6s, 1938	99	101
Lake Superior Paper 6s, 1941	105	108
Marathon Paper Mills Serial 5½s, 1942	99	101
Marinette & Menominee 7½s, 1936	103	105
Mead Pulp & Paper 5% Notes Serially, 1937	95	100
Mead Fibre 7s, 1937	97	101
Minnesota Ontario Paper Serial 6s, 1945	97½	100
Murray Bay Paper Serial 6½s, 1947	102	105
Munissing Paper Serial 6s, 1936	98	...
Nekoosa Edwards Paper 6s, 1928-42	96	...
Ontario Pulp & Paper 6s, 1931	108½	110½
Orono Pulp & Paper 6s, 1943	99	...
Orono Pulp & Paper 5s, 1941	96½	...
Oswego Falls Corp. 6s, 1941	99	102
Parker-Young Company 6½s, 1944	98	100
Paterson Parchment Paper 6s, 1938	101	103
Penobscot Chemical Fibre 6s, 1942	102	105
Port Alfred Pulp & Paper 5½s, 1947	98	100
Price Brothers 6s, 1943	105	...
Provincial Paper 5½s, 1947	98½	...
Queen City Paper 7s, 1933	98	...
River Raisin Paper 6s, 1936	98	100
Riordan Pulp & Paper 6s, 1942	102	104
Rolland Paper 6s, 1937	99	101
St. Croix Paper Serial 5s, 1937	99	...
St. Helen Pulp & Paper 6½s, 1931	99	103
St. Maurice Valley Corp. 6s, 1945	101	104
St. Maurice Valley Corp. 5½s, 1947	98½	100½
St. Regis Paper of Canada 6s, 1931	100	101½
St. Regis Paper of Canada 6½s, 1934	100	103
Smith (Howard) Paper Mills 7s, 1941	104	106
Spanish River Pulp & Paper 6s, 1931	108	110
Stevens-Thompson Paper 6s, 1942	94	96
Taggart Brothers 6s, 1944	95	100
Tait Paper & Color Industries 6s, 1934	88	92
Ticonderoga Pulp & Paper 5s, 1930	94	...
Ticonderoga Pulp & Paper 6s, 1940	100	102
Tomahawk Kraft Paper 6s, 1938	98	...
Tomahawk Pulp Paper 7s, 1932	99	...
Tonawanda Paper 5½s, Series 1941	99	102
Union Bag & Paper Power 6s, 1932	98	100
United Wall Paper Factories 6s, 1947	96	99
Warren (S. D.) Company 6s, 1945	103	105
Watab Paper 6½s, 1942	102	...
Waterway Paper Products 6s, 1931	100	101½
Wayagamack Pulp & Paper 6s, 1951	103	105
Westfield River Paper Serial 7s, 1943	89	93
Whitmer-Parson Pulp & Lumber 8s, 1938	20	25
Whitaker Paper 7s, 1942	108	110

STOCKS	BID	ASKED
American Box Board, Pfd.	9¼	10¼
American Box Board, Com.	9¾	10¾
Am. Tissue Mills, 7% Pfd.	90	93
British Columbia P. & P. Pfd.	75	80
Brompton Pulp & Paper 8% Pfd.	100	...
Champion Fibre, 7% Pfd.	108	110
Diem & Wing, 7% Pfd.	92	97
Eastern Mfg. Co. 1st Pfd.	55	...
Great Northern Paper, Com.	75	78
Hammermill Paper, new 6% Pfd.	100	...
Hinde & Dauch, Com.	125	None Off.
Hinde & Dauch, 6% Pfd.	102	None Off.
Holyoke Card & Paper	160	None Off.
Marathon Paper Mills, Com	140	...
Mengel Co., Pfd.	102	104
Midwest Box Co., 8% Pfd.	98	102
Midwest Box Co., 6% Pfd.	95	99
Louis De Jonge Co., 7% Pfd.	94	97
Oxford Papers Com.	195	...
Oxford Paper Co., Pfd.	108	111
Penobscot Chemical Fibre, Com.	80	...
Richardson Co., Com.	170	...
Sabin Robbins Paper Co., 8% Pfd.	105	110
St. Croix Paper	155	...
St. Regis Paper Co., 7% Cum. Prd.	105	108
Westfield River Paper Co., 1st Pfd.	Wanted	None off.
West Virginia Pulp and Paper Company	55	57
West Virginia Pulp and Paper, Pfd.	100	107
Whitaker Paper, 7% Cum. Pfd.	105	None Off.

NEWS PRINT DISCUSSED

(Continued from page 25)

opposing the recent newspaper-purchasing policy of the International Paper Company was tabled.

The effort to have the association formally record criticism of the paper and power company was initiated by Colonel Robert Ewing, publisher of the *New Orleans States*. While the Colonel was urging adoption of the resolution, announcement was made in Washington that the Federal Trade Commission had subpoenaed four witnesses preliminary to an investigation of the International's reported purchase of the *Boston Herald* and the *Boston Traveler*.

The consensus among the delegates to the A. N. P. A. convention, as told to reporters after the executive meeting by Charles H. Taylor of the *Boston Globe*, was that action toward the International was a matter for some agency other than the publishers' organization. "It was a matter of private business," he said, "and none of our business."

Ewing Views International as Utility

Colonel Ewing, although defeated in his effort, told reporters after the session that the International was two-thirds power company and one-third paper company. He reminded his auditors that the Federal investigation of public utilities had shown "professors to have been subsidized" by the power interests.

He disclosed that the paper company had recently acquired a chain of small dailies in Georgia and that he had "been told from the floor of this convention that the owners of the *Cleveland Plain Dealer* had received a tremendously flattering offer for their paper, which had been refused."

Referring to the statement that the International had sought to acquire newspapers only so that it could bind them to purchase their paper from the corporation, Colonel Ewing said that he "had never known any business that in fairness to both sides could be both a buyer and a seller."

"The International is a power company as well as a paper company," he continued, "and in the last year or eight months has shown a disposition to acquire newspapers. The company has moved most of its paper production to Canada and the water power sites it had here are open for power. You read of the Federal Trade Commission last year and how professors had been subsidized. You can see what it means for them to acquire newspapers.

"As far as the resolution went, I am very well satisfied. I have sounded the alarm and if newspaper publishers and the people do not heed, it is up to them."

Barrel Tester for Postage Stamps

Experiments have been continued at the Bureau of Standards, Washington D. C., with the barrel tester to find an envelope paper that will shed a certain proportion of stamps when subjected to very rough handling. Several kinds of kraft envelopes were tried using different methods of affixing. In all, tests involving more than one thousand stamps have been made and although the envelopes were worn out in the barrel tester, not one stamp was shed. In the future, this testing device will be used in connection with testing stamps received with complaints as defective. If, with a standard method of affixing, the stamps are not shed from kraft envelopes in a test that wears out the envelopes, sticking qualities would not be considered bad enough to justify a complaint.

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BOLTON QUALITY
Specialists in pulp and Paper Mill Knives For Twenty-Five Years

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of Nashua, New Hampshire, for
Waxing - Oiling - Coating
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is guaranteed to give you the best finish, biggest production, least trouble and most satisfaction of any equipment on the market today.
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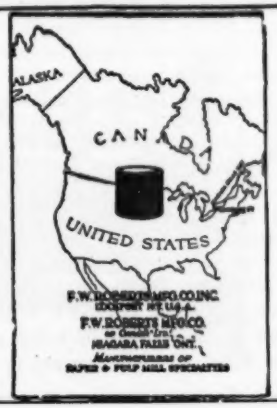
BURRS



BURRS

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, May 1, 1929.

Trading in the local paper market was moderately active during the past week. Demand for the various standard grades was mostly along routine lines. Supplies are moving into consumption in normal volume for the time of the year. Encouraging reports are being received from the salesmen of the leading paper organizations. Prices are generally holding to schedule.

Some improvement was reported in the news print market and a better feeling prevails since prices were stabilized and production was keyed to demand. Operations in the United States and Canada are now running at about 82 per cent of capacity while shipments are well up to average. Spot quotations remain unaltered.

Conditions in the paper board market continue irregular and although the demand is fairly good, the price situation remains unsatisfactory. The fine paper market is rather quiet at present, with no radical price changes. Coarse paper production is being maintained in sufficient volume to take care of current requirements.

Mechanical Pulp

Steadiness prevails in the ground wood market. Offerings of both imported and domestic mechanical pulp are limited and prices rule steady and unchanged. Representatives of Norwegian, Swedish and Finnish ground wood producers at a meeting in Stockholm recently concluded an agreement whereby the limitation on this class of pulp will be continued and close co-operation in regard to selling policies and prices will be put into effect.

Chemical Pulp

The feature of the chemical pulp market during the past week was the continued strength of imported strong unbleached sulphite. Offerings of this grade are rather limited and quotations are decidedly firm. Both imported and domestic bleached sulphite are also exhibiting a strong undertone. Other grades of chemical pulp are steady, with the exception of kraft, which is showing some signs of weakness. Prices are generally unaltered.

Old Rope and Bagging

Demand for both domestic and imported old rope is heavy and with offerings very scarce, prices are steady to firm. Foreign manila rope is quoted at from 4.40 to 4.65 and domestic old rope is selling at from 4.75 to 5.00. The bagging market is in a fairly sound position. Scrap bagging is moving in satisfactory volume and gunny bagging is in somewhat better request. Prices remain unchanged.

Rags

Paper mill interest in the domestic rag market is more pronounced than of late. Cotton grades are in excellent request. Blue overall cuttings are particularly active at present. Prices are generally holding up to formerly quoted levels. The foreign rag market is showing some signs of improvement. Demand for dark cottons is persistent. Offerings of linsey garments are limited, with prices steady to firm. Whites and blues are in better demand from the writing paper mills.

Waste Paper

Soft white shavings are beginning to arouse more interest from the paper mills. Supplies of this grade are not excessive and prices rule steady to firm. Demand for old kraft machine compressed bales has improved somewhat and prices are now quoted at from 1.80 to 1.90, a slight advance. The lower grades of paper stock are only in moderate demand from the board mills at present. White envelope cuttings are weaker and are now offered at from 3.00 to 3.50.

Twine

The twine market was fairly active during the past week. While most of the business transacted was along routine lines, prices were maintained at formerly quoted levels. The position of the industry is considered sound for this time of the year and as there are a fair number of inquiries around for future business, dealers are mostly optimistic.

Charles Young Joins Globe Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., April 30, 1929.—Charles Young, formerly director, buyer and department manager for Carter Rice & Co. Corporation, has become vice president and managing advisor of the Globe Paper Company, Inc. Mr. Young was out of the paper business for about three months, but the urge was very strong to resume his activities in the industry. He says, "once a paper man, always a paper man." The Globe Company, which was recently reorganized, has a new plan for reducing overhead expense for the printer and the publisher. This company has installed the latest paper cutting machines, which are handled by an expert. It is standardizing a certain number of brands, maintaining that eight grades of bonds meet all requirements and uses of the printer or consumer. The concern is specializing in case lots and wishes to be known as the "case lot house." The new plan, it is figured, means a saving of 15 to 25 per cent to the trade. The company represents a number of manufacturers, including the Valley Paper Company, of Holyoke; Ticonderoga Pulp and Paper Company, International Power and Paper Company, Advertisers Paper Company, American Writing Paper Company, Racquette River Paper Company, Peninsular Paper Company, and Wheelwright Paper Company.

New Texas Gulf Sulphur Plant In Operation

With the production of sulphur now under way at its new plant at Newgulf, Texas, on the Boling Dome, the Texas Gulf Sulphur Company, already the world's largest producer of sulphur, is in a position to meet a greatly advanced demand for that commodity in the future. Production sulphur by the well-known Frasch process was begun at Newgulf in the latter part of March.

The town of Newgulf, at which the plant is situated, is almost forty miles due north of the Texas Gulf Company's property at Gulf, from which the company produces more than 1,000,000 tons a year. Newgulf is about sixty miles due west of Galveston and approximately fifty miles southwest of Houston.

Railroad facilities to handle the heavy traffic that will result from the large production of the recently erected sulphur plant have already been provided. The town is at present connected with the Southern Pacific Railway by a line across Caney Creek and the Santa Fe Railroad is now engaged in building a connecting link.

For "wire" boxes—permanent Bronze side rails with diagonally inserted sections of selected Vermont rock maple, with grain of the wood UPRIGHT.

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3. Longer wire life
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5. Easy to get quickly
6. Eliminates streaking
7. Increases suction
8. Fewer "washups"
9. No grit or splinters
10. Easy to install

Try them. See for yourself what a wonderful improvement they are. Write for full information and prices.

THE EMERSON MANUFACTURING COMPANY LAWRENCE, MASSACHUSETTS

The Emerson End-of-Grain Suction Box Cover for "felt" boxes.

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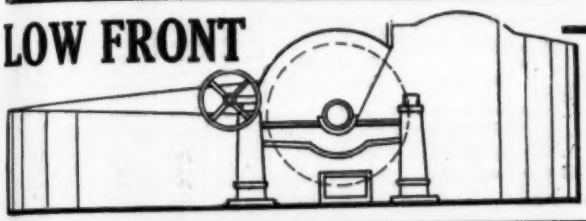

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JUTE BUTTS, MAGAZINES, CATALOGS, OLD PAPERS, THREAD WASTE AND ALL GRADE OF RAGS CUT QUICKLY AND EFFICIENTLY WITH THE

GIANT The Standard of the World for 59 Years

Giant Rag Cutters have capacities of from 1 to 5 tons per hour

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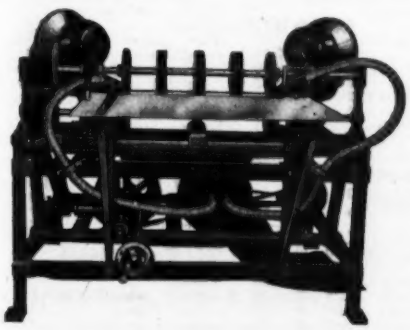

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Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, May 1, 1929.

BLANC FIXE.—The position of the blanc fixe market is practically unchanged. Demand for the pulp and the powder is seasonal. Prices are holding to schedule. The pulp is quoted at from $42.50 to $45.00 per ton, while the powder is selling at from 3¾ cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—Steadiness prevails in the bleaching powder market. Contract shipments are proceeding at a satisfactory pace. Prices remain unaltered. Bleaching powder is quoted at from $2.00 to $2.35 per 100 pounds, in large drums, at works.

CASEIN.—Demand for casein was moderately active during the past week. Prices remain unchanged. Domestic casein is quoted at from 16 cents to 16¼ cents per pound, while standard ground imported is selling at 16 cents per pound and finely ground at 16¼ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—The caustic soda market is exhibiting a strong undertone. Shipments against contract are well ahead of last year. Solid caustic soda is still quoted at from $2.90 to $2.95, while the flake and the ground are selling at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—Supplies of china clay are moving into consumption in satisfactory volume. Prices are holding up to the levels maintained for some time past. Imported china clay is quoted at from $15 to $25 per ton, ship side, while domestic paper making clay is selling at from $8 to $13 per ton, at mine.

CHLORINE.—The chlorine market continues fairly active. Contract shipments are proceeding at a steady pace. Prices remain unchanged. Chlorine is quoted at 3 cents per pound, in tanks, or multi-unit cars, at works, on standard contracts. The spot quotation ranges from 3¼ cents to 3½ cents per pound.

ROSIN.—Conditions in the rosin market have improved slightly. At the naval stores, the grades of gum rosin used in the paper mills are quoted at from $8.35 to $8.50 per 280 pounds, in barrels, ex dock. Wood rosin is selling at from $6.60 to $7.40 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Offerings of salt cake are decidedly limited and the market rules steady to firm. Demand for this product is persistent and contract shipments have been heavy of late. Salt cake is quoted at from $16 to $18 per ton, while chrome salt cake is selling at from $14 to $15 per ton, in bulk, at works.

SODA ASH.—No radical changes were recorded in the soda ash market but the contract movement is being maintained in excellent volume. Prices are holding to previously quoted levels. Contract quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bags, $1.32½; and in barrels, $1.55.

STARCH.—Most of the business transacted in the starch market during the past week was along routine lines. Contract shipments were well up to average for the season. Prices remain unchanged. Special paper making starch is quoted at $3.82 per 100 pounds, in bags, and at $3.99 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—Production of sulphate of alumina is proceeding in sufficient volume to take care of prevailing requirements. Prices are unchanged. Commercial grades of sulphate of alumina are quoted at from $1.40 to $1.55 and iron free at from $1.95 to $2.05 per 100 pounds, in bags, at works.

SULPHUR.—The sulphur market is steady. Contract shipments are moving in a satisfactory manner. Sulphur is quoted at $18 per ton, in lots of 1,000 tons or over, on yearly contracts, and at $20 per ton for any smaller quantity over that period. On spot and nearby car loads, the quotation is $21 per ton.

TALC.—Little change has been reported in the talc market of late. The contract movement is normal for the season. Prices are generally unchanged. Domestic talc is quoted at from $16 to $18 per ton, at eastern mines, while imported talc is selling at from $18 to $20 per ton ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine sized	8.00	@11.00
Book, Cased—		
S. & S. C.	6.00	@ 7.50
M. F.	5.75	@ 7.00
Coated and Enamel	7.50	@12.00
Lithograph	7.50	@12.00
Tissues—Per Ream—		
White No. 1	.75	@ 1.00
Anti-Tarnish	1.35	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.75	@ .80
Kraft	1.00	@ 1.10
Manila	.75	@ .80
Kraft—		
No. 1 Domestic	6.25	@ 6.50
No. 2 Domestic	5.25	@ 5.50
Southern	4.25	@ 4.50
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
Screenings	3.00	@ 3.25
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

News, per ton—		
Rolls, contract	62.00	@ —
Rolls, spot	62.00	@ —
Sheets	67.00	@ —
Side Runs	47.00	@52.00
Boards—per ton—		
News	32.50	@37.50
Straw	52.50	@55.00
Chip	30.00	@35.00
Binders' Boards	65.00	@70.00
Sgl. Mla. Ll. Chip.	42.50	@45.00
Wood Pulp	80.00	@85.00
65 Test Jute Liner.	52.50	@ —
85 Test Jute Liner.	55.00	@ —

Mechanical Pulp

(Ex-Dock)

No. 1 Imported—		
Moist	28.00	@31.25
Dry	32.00	@34.00

(F. o. b. Mill)

No. 1 Demestic	26.00	@29.00
Screenings	15.00	@20.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.75	@ 4.40
Easy Bleaching	2.90	@ 3.10
No. 1 strong unbleached	2.60	@ 2.80
Mitscherlich unbleached	2.60	@ 3.25
No. 2 strong unbleached	2.40	@ 2.50
No. 1 Kraft	2.40	@ 2.75
No. 2 Kraft	2.35	@ 2.50
Sulphate—		
Bleached	3.60	@ 3.85

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.40	@ 4.75
Easy Bleaching Sulphite	2.60	@ 2.75
News Sulphite	2.40	@ 2.50
Mitscherlich	3.00	@ 3.25
Kraft (Domestic)	2.50	@ 3.30
Soda Bleached	3.25	@ 3.40
Sulphate Screenings—		
Coarse	.75	@ .95
Refined	1.65	@ 1.85

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	11.00	@11.50
New White, No. 2	8.00	@ 8.50
Silesias No. 1	7.50	@ 8.00
New Unbleached	11.00	@11.50
New Blue Prints	5.25	@ 5.50
New Soft Blacks	5.25	@ 5.75
Strictly Folded	.58	@ .63
No. 1 Mixed Paper	.45	@ .50
Washables	4.75	@ 5.25
Fancy	5.75	@ 6.25
Mixed Khaki Cuttings	4.75	@ 5.25
Pink Corset Cuttings	8.00	@ 8.50
O. D. Khaki Cuttings	5.15	@ 5.75
Men's Corduroy	3.75	@ 4.25
New Mixed Blacks	3.50	@ 3.75

Old Rags

White, No. 1—		
Repacked	5.50	@ 6.00
Miscellaneous	4.50	@ 5.00
White, No. 2—		
Repacked	3.00	@ 3.50
Miscellaneous	2.50	@ 2.75
St. Soiled, White	2.00	@ 2.15
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.75	@ 2.00
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.70	@ 1.80
No. 1	1.70	@ 1.80
No. 2	1.55	@ 1.65
No. 3	1.30	@ 1.40
No. 4	1.25	@ 1.35
No. 5A	.90	@ 1.05

Foreign Rags

New Rags

New Dark Cuttings	2.50	@ 3.00
New Mixed Cuttings	2.75	@ 3.25
New Light Silesias	7.00	@ 7.50
Light Flannelettes	7.50	@ 8.00
Unbleached Cuttings	10.00	@11.00
New White Cuttings	10.50	@11.50
New Light Oxfords	7.00	@ 7.50
New Light Prints	5.50	@ 6.50

Old Rags

No. 1 White Linens	7.50	@ 8.25
No. 2 White Linens	5.75	@ 6.75
No. 3 White Linens	4.75	@ 5.25
No. 4 White Linens	3.00	@ 3.50
No. 1 White Cotton	5.50	@ 6.50
No. 2 White Cotton	4.50	@ 5.50
No. 3 White Cotton	3.00	@ 4.00
No. 4 White Cotton	1.90	@ 2.15
Extra Light Prints	2.75	@ 3.25
Ord. Light Prints	2.25	@ 2.50
Med Light Prints	1.90	@ 2.10
Dutch Blue Cottons	2.20	@ 2.40
French Blue Linens	2.75	@ 2.85
German Blue Linens	2.35	@ 2.55
German Blue Cottons	2.15	@ 2.25
Checks and Blues	1.85	@ 2.00
Lindsay Garments	1.90	@ 2.00
Dark Cottons	1.60	@ 1.65
Old Shopperies	1.55	@ 1.60
New Shopperies	1.50	@ 1.60
French Blues	2.10	@ 2.25

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.65	@ 1.75
Domestic	1.70	@ 1.75
Wool Tares, light	1.60	@ 1.65
Wool Tares, Heavy	1.65	@ 1.75
Bright Bagging	1.65	@ 1.70
Small Mixed Rope	1.25	@ 1.40
Manila Rope—		
Foreign	4.40	@ 4.65
Domestic	4.75	@ 5.00
New Burlap Cut	2.75	@ 3.00
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, white, No. 1	3.25	@ 3.50
Hard, white, No. 2	2.40	@ 2.55
Soft, White, No. 1	2.50	@ 2.60
White envelope cuttings	3.00	@ 3.50
Flat Stock—		
Stitchless	1.60	@ 1.70
Overissue Mag.	1.60	@ 1.70
Solid Flat Book	1.50	@ 1.60
Crumpled No. 1	1.10	@ 1.20
Solid Book Ledger	2.00	@ 2.10
Ledger Stock	1.70	@ 1.80
New B. B. Chips	.65	@ .75
Manilas—		
New Env. Cut	2.40	@ 2.60
New Cuttings	1.60	@ 1.85
Extra No. 1 old	1.25	@ 1.35
Print	.75	@ .80
Container	.58	@ .63
Bogus Wrapper	.75	@ .85
Old Kraft Machine Compressed bales	1.80	@ 1.90
News—		
No. 1 White News	1.65	@ 1.75
Blue Overall	7.50	@ 8.00
Strictly Overissue	.75	@ .80
Strictly Folded	.55	@ .60
No. 1 Mixed Paper	.43	@ .48
Common Paper	.30	@ .35

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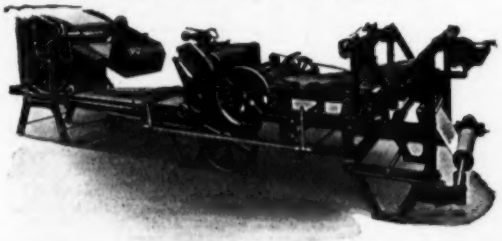

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Twines
(F. o. b. Mill)

Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.19	@	.21
No. 2	.18	@	.20
Tube Rope—			
4-ply and larger	.16	@	.17
Fine Tube Yarn—			
5-ply and larger	.21	@	.25
4-ply	.25	@	.29
3-ply	.28	@	.32
Unfinished India—			
Basis	.13	@	.14
Paper Makers Twine			
Balls	.11	@	.12
Box Twine, 2-3 ply	.15	@	.17
Jute Rope	.17	@	.19
Amer. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.16	@	.18
No. 2 Basis	.14	@	.16
Sisal Lath Yarn—			
No. 1	.14	@	.16
No. 2	.12	@	.14
Manila Rope	.22	@	.24

CHICAGO

Paper
(F. o. b. Mill)

All Rag Bond	.35	@	.41
No. 1 Rag Bond	.25	@	.34
No. 2 Rag Bond	.14	@	.25
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¾
No. 2 M. F. Book	.05¾	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04¾	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.06¾	@	.06½
Southern Kraft	.03¾	@	.04
No. 2 Kraft	.04	@	.04¼
Wood Tag Boards	.04¼	@	.06¾
Sulphite Screenings	.03	@	.03¾
Manila Tissue—			
24x36 Sheet	.07	@	.07¾
White Tissue—			
20x30 Sheet	.07¼	@	.07½
(Delivered Central Territory)			
News, per ton—			
Rolls, contract	62.00	@	—
Sheets	67.00	@	—
Boards, per ton—			
Plain Chip	37.50	@	41.00
Solid News	47.50	@	—
Solid News	47.50	@	—
Manila Lined Chip	55.00	@	—
Container Lined—			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.20	@	2.25
White Env. Cuttings	2.40	@	2.50
No. 1 Soft Shavings	2.00	@	2.10
No. 1 Mixed	.90	@	1.00
No. 2 Mixed	.70	@	.75
Ledger & Writings	1.45	@	1.50
Solid Books	1.25	@	1.40
Blanks	1.40	@	1.50
Kraffs	1.60	@	1.75
New Kraft Cuts	2.15	@	2.25
Manila Envelope Cuttings	1.65	@	1.75
Ex. No. 1 Manila	1.30	@	1.45
Print Manila	.80	@	.85
Folded News (overissue)	.80	@	.85
Old Newspapers—			
No. 1	.70	@	.80
No. 2	.65	@	.70
Mixed Papers—			
No. 1	.65	@	.70
Roofing Stocks—			
(F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.06	@	.40
Ledgers	.09	@	.40
Writings—			
Superfine	.12½	@	.18
Extra fine	.18	@	.22
Fine	.17	@	.26
Fine, No. 2	.15	@	.25
Fine, No. 3	.10	@	.20
Book, M. F.	.05½	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.09½	@	.16
Coated Lithograph	.07	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.08	@	.09
Manila Sul., No. 1	.04	@	.05½
Manila No. 2	.03	@	.04
No. 2 Kraft	.06	@	.06½
No. 1 Kraft	.06½	@	.07
Common Bogus	.03½	@	.04
(Delivered Philadelphia)			
News Print Rolls	62.00	@	—
Straw Board	52.50	@	75.00
News Board	35.00	@	40.00
Chip Board	32.00	@	40.00
Wood Pulp Board	85.00	@	95.00
Binder Boards—			
No. 1, per ton	75.00		
No. 2, per ton	70.00		
Carload lots	68.00	@	70.00
Tarred Felts—			
Regular	55.50	@	57.00
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.10½	@	.11
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.08½	@	.09
Black Silesia, soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable, No. 1	.04½	@	.05
Blue Overall	.07½	@	.08
Cottons—According to grades—			
Washable, No. 2	.03	@	—
New Blue	.03	@	.03½
Fancy			
New Black Soft	.05	@	.05¼
New Light Seconds	.02½	@	.03
New Dark Seconds	1.85	@	2.00
Khaki Cuttings—			
No. 1 O. D.	.05½	@	.05¾
No. 2 Mixed	.04½	@	.04¾
Corduroy	.03	@	.03½
New Canvas	.08½	@	.09
New Black Mixed	.03¾	@	.04½

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.50	@	1.60
Domestic	1.75	@	—
Manila Rope	3.50	@	4.00
Sisal Rope	1.50	@	—
Mixed Rope	1.10	@	1.25
Scrap Burlaps—			
No. 1	1.50	@	1.60
No. 2	1.10	@	1.20
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	3.20	@	3.25
No. 2 Hard White	2.75	@	3.00
No. 1 Soft White	2.50	@	2.60
No. 2 Soft White	1.90	@	2.00
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.85	@	1.90
Writing Paper	1.60	@	1.65
No. 1 Books, heavy	1.45	@	1.55
No. 2 Books, light	1.20	@	1.25
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	.95	@	1.00
Container Manila	.85	@	.90
Old Kraft	2.25	@	2.50
Common paper	.50	@	.55
No. 1 Mixed Paper	.65	@	.70
Straw Board, Chip	.65	@	.70
Binders Board, Chip	.65	@	.70
Overissue News	.85	@	.90
Old Newspaper	.65	@	.70

Domestic Rags (Old)

White, No. 1—			
Repacked	4.25	@	4.50
Miscellaneous	3.50	@	3.75
White, No. 2—			
Repacked	.02½	@	.02¾
No. 2	1.30	@	1.35
No. 3 (Roofing)	1.15	@	1.25
No. 4	1.00	@	1.15
No. 5A	.75	@	.85
B	.65	@	.75
C	.65	@	.75
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.60	@	1.80
Black Stockings (Export)	3.90	@	4.25
Roofing Stock—			
Foreign No. 1	1.65	@	1.75

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.15
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.07	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05¾	@	.08½
Book, Coated	.08½	@	.20
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06¼
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	—	@	.06½
No. 2 Kraft	.05¼	@	.06
Common Bogus	.02	@	.02¾
Delivered New England points			
News Print Rolls	61.50	@	—
Straw Boards, rolls .009			52.50
Straw Board in Sheets, basis 35s to 70s	54.50	@	55.00
Filled News Board	37.50	@	40.00
Chip Board	35.00	@	37.50
Single Manila Lined Chip	47.50	@	50.00
Single White, Patent Coated Newsboard			
Bender	67.50	@	80.00
Wood Pulp Board	80.00	@	85.00
Binder Boards	70.00	@	75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.25	@	3.75
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.50	@	2.60
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	2.35	@	2.45
No. 1 Books, Heavy	1.50	@	1.55
No. 1 Books, Light	—	@	1.15
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	1.15	@	1.20
White Blank News	1.60	@	1.65
Old Kraft	—	@	1.80
Print Manila	.80	@	.90
No. 1 Mixed Paper	.50	@	.52½
Overissue News	.65	@	.80
Old Newspapers	—	@	.55
Box Board, Chip	.55	@	.60

Bagging
(F. o. b. Boston)

Gunny No. 1—			
Foreign	—	@	1.60
Manila Rope—			
Foreign	4.50	@	4.75
Domestic	5.00	@	—
Mixed Strings	.90	@	1.00
Jute Wool Strings	—	@	1.00
Scrap Burlaps	1.25	@	1.35
Scrap Sisal	1.60	@	1.80
Scrap Sisal for shredding	1.75	@	2.00
Wool Tares, heavy	—	@	1.37½
New Burlap Cutting	1.90	@	2.00
Australian Wool Pouches	2.75	@	3.00

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.09½	@	.10
Silesias, No. 1	.06	@	.06¼
New Unbleached	.10	@	.10¼
Fancy	.04	@	.04½
Washable	.04	@	.04¾
Cottons—According to grades			
Blue Overalls	.06¼	@	.06¾
New Black, soft	.04	@	.04¼
Khaki Cuttings	.04	@	.04¼
O. D. Khaki	.05	@	—
Corduroy	.03	@	.03½
New Canvas	.08	@	.08½

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Twos and Blues	2.75	@	3.00
Thirds and Blues—			
Repacked	2.50	@	—
Miscellaneous	1.75	@	1.90
Roofing Stock—			
No. 1	1.65	@	1.75
No. 2	1.45	@	1.55
No. 3	1.05	@	1.10
No. 4	1.10	@	1.15

Foreign Rags
(F. o. b. Boston)

Dark Cottons	1.60	@	1.65
New No. 1 Shirt Cuttings	9.00	@	10.00
Dutch Blues	2.00	@	2.12½
Lace Curtains	5.10	@	5.50
New Checks & Blues	4.25	@	4.50
Old Fustians	1.90	@	—
Old Linsey Garments	1.85	@	1.90

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¾	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
Book—			
No. 1 M. F. (carloads)	7.50	@	—
No. 2 M. F. (carloads	7.25	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.00	@	—
No. 2 S. C. (carloads)	7.75	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and Litho	13.25	@	—
No. 2 Coated and Litho	12.25	@	—
No. 3 Coated and Litho	11.50	@	—
Coated tinted	14.50	@	—
Wrapping—			
Rag Brown	4.95	@	—
White Wrap	5.25	@	—
"B" Manila	5.80	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.00	@	—

(Delivered Toronto)

News, per ton—			
Rolls (contract)	61.50	@	62.00
Sheets	67.00	@	—

Pulp
(F. o. b. Mill)

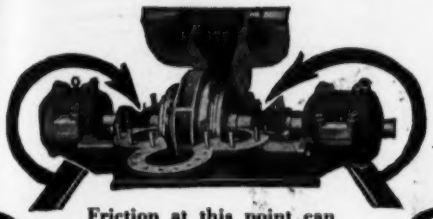
Ground Wood	30.00	@	31.00
Sulphite easy bleaching	62.00	@	—
Sulphite news grade	62.00	@	—
Sulphite, bleached	75.00	@	—
Sulphate	60.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	2.85	@	—
White Blk. News	1.60	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.40	@	—
Light and Crumpled Book Stock	1.25	@	—
Ledgers and Writings	1.50	@	—
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.80	@	—
Strictly Folded	.80	@	—
No. 1 Mixed Paper	.70	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.11½	@	—
Fancy Shirt Cuttings	.05½	@	—



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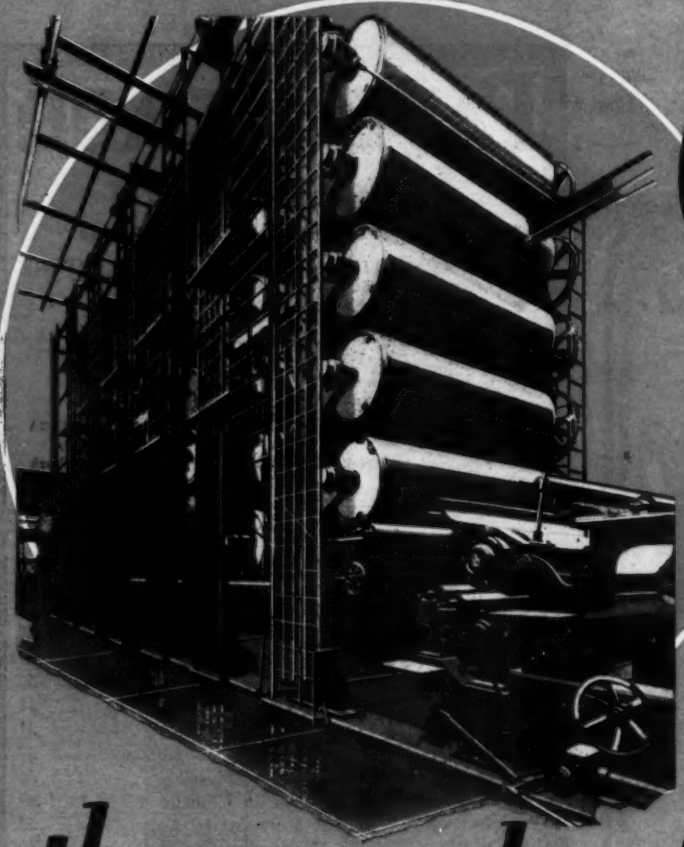

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